

ADMINISTRATION  
OF THE  
COLLEGE CURRICULUM

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WILLIAM T. FOSTER

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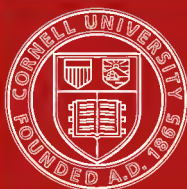
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**ADMINISTRATION OF  
THE COLLEGE CURRICULUM**



# ADMINISTRATION OF THE COLLEGE CURRICULUM

BY  
WILLIAM T. FOSTER  
*President of Reed College*



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## PREFACE

THE chief movement in the history of the college curriculum in America is the breakdown of prescribed programs through the evolution of the Elective System. Accordingly, this movement is the dominant interest in any study of the curriculum, historical or critical. A generation ago it was interesting to speculate on what might happen if this principle of free choice should work its way down to the freshman year. Since then, opinions on this subject have lost their charm, for a vast body of actual experience now invites organization and interpretation. In the archives of Harvard College alone are the records of nearly half a century of elective studies. Here is a well-equipped laboratory awaiting students of higher education. Interpreted by proper statistical methods, these records can give guidance in the administration of the college curriculum beside which the opinion of any man, or any body of men, is insignificant. Yet such

records have not been asked to tell a tenth of what they know. The criticism of the American college which has been so abundant of late has yielded a hundred opinions to one fact.

It was the hope of increasing the proportion of fact—indeed, the urgent necessity for scientific guidance in pressing problems of administration—that prompted the following studies. If these studies merit consideration, it is because they throw the light of history upon present problems and venture few suggestions which are not based on the careful organization of facts. One of the studies alone embodies nearly 100,000 college grades, covering the total experience of 4311 college students under the Elective System at Harvard College for fifteen years. Another study summarizes the data contained in the publications of two hundred colleges, and is, so far as I know, the only comprehensive presentation of contemporary practices in the administration of the curriculum.

Here and there, in Chapters I, XI, XII, and XIV, I have used paragraphs which I recently wrote for Monroe's *Cyclopedia of Education*,

published by the Macmillan Company, and for the *Educational Review*, the *School Review*, *Science*, and the *Nation*.

For some of the data used in these studies I am indebted to the officers of two hundred colleges. Especially I should acknowledge the help of Dean LeB. R. Briggs and Professor A. O. Norton of Harvard University, Professor V. P. Squires of the University of North Dakota, Professor W. G. Manly of the University of Missouri, President C. H. Spooner of Norwich University, and the librarians of Bowdoin College. The men who read the manuscript have my gratitude, — President William DeWitt Hyde and Professor Charles T. Burnett of Bowdoin College, and President A. Lawrence Lowell of Harvard University. Above all, I wish here to record my appreciation of the generous help and the rare spirit of the men of Teachers College, Columbia University, to whom I dedicate as much of this volume as will bear their scrutiny.

W. T. F.



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# **ADMINISTRATION OF THE COLLEGE CURRICULUM**

## **PART I HISTORICAL**



## CHAPTER I

### BRIEF HISTORY OF THE COLLEGE CURRICULUM IN THE UNITED STATES

THE origin of the American college as the one distinctively American educational type, and the complex problems that confront that institution to-day in the administration of its curriculum, cannot be understood apart from their historical setting. With the early Renaissance in Europe came the university, with its four departments, — the arts course and the professional schools of law, medicine and theology. The Arts course, of which the American college is the lineal descendant, was everywhere regarded as preparatory to professional studies. Its purpose was to lay a broad and general foundation for the specialized studies of the higher faculties.

Not long after the close of the Middle Ages, a modification of the Arts course began which has continued to the present day. The elementary studies were gradually crowded down

into the programs of preparatory institutions and more advanced studies took their places. The *trivium*—grammar, rhetoric and dialectic—which at first led to the B. A. degree, was gradually relegated to a new type of school which developed to prepare students for the Arts course. But even after the Renaissance and the Reformation had thus affected the *trivium*, the Arts course retained its distinct relationship to the professional schools.

The Renaissance, with the ideal of culture for its own sake, left a lasting humanistic impression on the old Arts course. The wider vision of learning regarded the college course no longer as a mere preparation for the study of three traditional professions, but rather as a liberal training leading directly to effective participation in scores of new activities.

With the Reformation in Germany came changes which led to a new type of university, and eventually to a school system with no intermediate institution comparable to the early Arts course. Gradually the college with its dormitory system and secluded life disappeared, and in the commercial towns of Ger-

many the modern type of university developed. At the same time several new types of preparatory schools were founded, which gradually grew into the modern gymnasia with courses leading directly to the universities. This was not, however, without periods of transition characteristic of the origins of schools in all countries. The new type of preparatory school edged its way in between the old grammar school and the Arts course, overlapping in both directions. After a long period, during which the fields of the several types of institutions were but vaguely defined, a line was drawn in the nineteenth century between the gymnasium and the university, leaving to the former virtually the entire Arts course of the early universities. Thus the German university abandoned the old ideal of liberal education and general mental discipline in favor of specialized technical training.

The Reformation in England had no such effect on English higher schools. The colleges of the English universities, with their separate buildings, organizations and community life, were so firmly established, so fortified by tradition, so safe from the en-

croachments of state secondary schools, that they have survived, with insignificant changes, even the loud demands of modern times. Instead of the somewhat antagonistic gymnasia, there arose in England the great Public Schools—such as Winchester, Eton, Rugby—dominated by the universities and in full sympathy with them. Thus the English college has retained as its aim the training of the faculties for use in all the needs of life,—its ideal a liberal rather than a technical education.

It was this Arts course and this ideal that the early settlers sought to transplant in America, and here almost at once began the old world custom of crowding down the elementary subjects into the programs of the lower schools. From the founding of Harvard College in 1636 to the present day, this process has continued. Toward the end of the eighteenth century, it resulted in the establishment of the Academy, an intermediate school between the colleges and the old Latin grammar schools. The Academy repeated the history of its prototype in Europe. It took over more and more of the work of the early col-



lege ; and the college responded, at first rather reluctantly, to the constant pressure to add new subjects to its curriculum. When the prescribed course was found to give the student a little of everything and not much of anything, the overloaded curriculum broke down of its own weight. Then the Elective System evolved as a means of relief and helped to continue the process that had been going on for centuries. Inevitably the average age of graduation from college was increased by several years, demands came for a shortening of the college course, and the whole question of the place of the College of Liberal Arts in American life became one of increasing importance.

Meantime the most significant influence on the college from below has been the growth of public high schools. Under independent municipal management and enthusiastic public support; responding more and more to the demands for practical education; of recent years conscious of its power and throwing off the pernicious shackles of college control; reaching farther and farther into the domain once held by the college alone, the public

high school has produced in America a situation similar in some respects to the one which in Germany long ago resulted in the elimination of the Arts course as a separate institution.

From above two movements have come to fill out the parallel: first, the establishment of many professional schools with high school graduation as the standard for admission; and, second, the development of graduate schools of Arts under the influence of German universities. Inevitably the old English Arts course and the new German Arts course, with conflicting ideals, have produced some confusion wherever they have been placed side by side in the same institution. Few administrators have seen clearly the distinct sphere and function of each type of Arts course. The result has been what is called the invasion of the Liberal Arts course by professional studies. Inevitably the college within the university has suffered by this confusion with graduate schools. It has failed to keep its distinct sphere, to retain a faculty of ablest men devoted primarily to its needs, or to develop a pedagogy of its own made imperative by changing con-

ditions of size of classes, curriculum and social needs. All of these historical movements, except the development in America of the graduate Arts course under German influence, have affected alike the college within the university, whether under state or private control, and the isolated small college. Out of it all the great problem of the college has come insistently to the front. The early years of the twentieth century mark a period of trial and transition for the college, the outcome of which is not yet evident.

From the founding of Harvard College in 1636 to the Revolutionary War, the college curriculum in America was for the most part a faithful following of the studies that had been pursued in English universities by the promoters of higher education in the new world. As late as 1764 the influence of the mother country is shown in the Charter of Brown University, which impowers the institution to "Confer any and all the Learned Degrees which can or ought to be given and conferred in any of the Colleges and Universities in America, Europe and particularly in the University of Cambridge, and Edinburgh

in Great Britain." The avowed object of all these colleges, on both sides of the Atlantic, was to raise up a body of learned men, especially men for the Christian Ministry.

The laws of President Dunster of Harvard, adopted in 1642, and now preserved in the archives of the university in the President's own handwriting, indicate the scope of the first college curriculum in America. The document opens as follows: (Translation of the Latin original, as published in *The College Curriculum in the United States*, by Louis F. Snow): "Every scholar that on proof is found able to translate the original of the Old and New Testament into the Latin tongue, and to resolve them logically, and shall be imbued with the beginnings of natural and moral philosophy, withal being of honest life and conversation, and at any public act hath the approbation of the Overseers and Master of the College, may be invested with his first degree; but no one will expect this degree unless he shall have passed four years in college and has maintained therein a blameless life and has sedulously observed all public exercises."

In advocating the change from the three-

year course with which the college started to a four-year course, President Dunster is at pains to point out that the scholars will not thus remain in our college one minute longer before they become M. A. than ordinarily they do in all the Cambridge colleges in England. The requirements for the degree of Baccalaureate in Arts at this time read: "The first year shall teach Rhetoric, second and third years Dialectics, and the fourth year shall add Philosophy. . . . In this course of four years each one shall dispute twice in his public schools and shall respond twice in his own class; which if he performs, and is found worthy after the regular examination, he shall become an A. B." This was the curriculum of Oxford and Cambridge which all but one of the American colleges sedulously followed during the period of colonial dependence, and the influence of which survives to-day in our oldest institutions. The curriculum was itself a heritage of the ancient *trivium* (grammar, rhetoric and dialectic) and *quadrivium* (arithmetic, geometry, music and astronomy). Influenced by the Church, however, the curriculum at Cambridge, England, in the early

years of the college at Cambridge, Massachusetts, had become little more than Latin and Greek, with much drill and disputation in Aristotelian logic and philosophy, to which were added some elementary mathematics and a few scraps of physical science.

The first college curriculum in America, as published in *New England's First Fruits*, reveals a three-year course, as follows: —

- (1) Mondays and Tuesdays: Philosophy, comprising logic and physics for the first year, ethics and politics for the second year, arithmetic, geometry and astronomy for the third year. For each morning, theory; for each afternoon, practice in philosophical disputations.
- (2) Wednesdays: Greek for all classes. For the first year, etymology and syntax, with afternoon practice in the rules of grammar; for the second year, prosody and dialectics, with practice in poesy after dinner; for the third year, more Greek in theory and practice.
- (3) Thursdays: theory of Hebrew, Chaldee, and Syriac grammar with practice in corresponding Biblical texts.

- (4) Fridays: rhetoric, with English composition and declamation.
- (5) Saturdays: mornings, "Divinity Catechetick" and "Common Places," i. e. scholastic disputations; afternoons, history in the winter, nature of plants in the summer.

This curriculum of President Dunster remained substantially unchanged during the entire seventeenth century.

Yale owed its early curriculum to Harvard and, in turn, passed it on to Princeton. For nearly a century after the founding of Harvard, there was no important change in the studies. Then Yale received some "valuable philosophical apparatus": surveying instruments, a telescope, a microscope, a barometer. This was the humble beginning of the scientific studies which, just a century later, were to demand a curriculum of their own, parallel to the classical course and leading to the B. S. degree.

During the middle of the eighteenth century, we find some provision for the study of chemistry, astronomy, geography, algebra, trigonometry, conic sections and fluxions. Benja-

min Franklin's gift of electrical apparatus is received at Yale, and James Bowdoin's "generous donation of an Orrery" at Harvard. French is now and then permitted as an extra course. But divinity, supported by Hebrew, remains the crowning study of the curriculum; and the General Assembly of Connecticut, in 1753, declares anew "that one principal end proposed in erecting the college was to supply the churches in this Colony with a learned, pious and orthodox Ministry." Up to this time the new world seems content with the meagre curriculum of the old world. The new ideals and the new studies were to come with the breakdown of traditions in the Revolutionary period, the consciousness of national life and the need of training for citizenship.

The announcement of King's College (now Columbia University) in 1754 heralded a broader course of study. Children are to be taught not only goodness, but "such useful knowledge as may render them creditable to their Families and Friends, Ornaments to their Country and useful to the public Weal in their Generations. . . . As to Religion, there is no intention to impose on the Schollars,



the peculiar Tenets of any particular Sect." About this time William Smith drew up his *General Idea of the College of Mirania*, the first independent effort in America to construct a logical curriculum and the first clear statement of the modern aim of good and efficient citizenship.

The author of this enlightened plan was elected First Provost of the "Academy" in Philadelphia. There, in 1756, he secured the adoption of a liberal scheme of studies. It included not only the classics and elementary mathematics, but surveying, navigation, dialing and Euclid. In the third year came ethics and physics, the laws of nations, government, trade and commerce. Physics included mechanics and experimental philosophy, astronomy, natural history, chemistry and agriculture. For private hours readings were recommended in a wide range of subjects. Throughout the three years of the course the professional needs of theologians, of first importance in the contemporary curricula of Harvard, Yale and Princeton, were at Philadelphia subordinated to the practical needs of all students.

William and Mary College, from its foun-

dation in 1693 to the Revolution, had virtually the Oxford curriculum. In 1779 came radical changes. That year, Thomas Jefferson became governor of Virginia and one of the Visitors of the College. He says, "I effected during my residence in Williamsburg that year a change in the organization of that institution, abolishing the grammar school and the two Professorships of Divinity and Oriental Languages, and substituting a Professorship of Law and Police, one of Anatomy, Medicine and Chemistry, and one of Modern Languages; and the Charter confining us to six professorships, we added the Law of Nature and of Nations and the Fine Arts to the duties of the Moral Professor, and Natural History to the Professor of Mathematics and Natural Philosophy." President Madison said, in 1780, "The Doors of ye University are open to all, nor is even a knowledge in ye ant. Languages a previous Requisite for Entrance." This liberal program of William and Mary, freed from the control of any particular sect, instituted by statesmen, dominated by the democratic ideals of the American Revolution, marks the close of the Colonial Period in

the history of the college curriculum in America.

It must not be supposed, however, that there was any sudden and general expansion of college programs. Academic groups are too conservative to admit anything but the most gradual evolution. Even after the new light was brought from without to shine on the old college of William and Mary, the program at Yale for the first three years of the course, as indicated by President Stiles's *Memo-randa* of November 29, 1783, was still mainly Latin, Greek and mathematics, although some time was given to English grammar, logic, geography, rhetoric and philosophy. In the senior year the Greek Testament was prescribed, with Locke's *Human Understanding*, Clap's *Ethics* and the occasional addition of such books as "Edwards on the Will."

At Harvard, about this time, the first significant change in the colonial curriculum permits those who are not preparing for the ministry to take French instead of Hebrew. Before the close of the century considerable attention is given to scientific studies, beginning with a course of lectures on Natural

History for "such students as shall obtain permission under the hand of their parents or Guardians to attend." Even more liberal in its recognition of science and government is the course of study adopted at Columbia University, though Princeton and Rhode Island College under its influence are not much affected by the new trend.

Chemistry, the first science to attain a worthy place in the college curriculum, was first taught in the medical schools of Pennsylvania and Harvard. By 1820 the subject was included in the curriculum of nearly every American college, covering several topics, such as heat and electricity, that were later differentiated under the name of physics.

The decade 1820-1830, as we shall see later, marks a virtual renaissance in higher education in America. Most conspicuous in this movement is Thomas Jefferson and the University of Virginia. Its program of studies was not only the most comprehensive of its time, but was the first university curriculum in America to be administered under a virtually complete Elective System. During this same decade, Rensselaer Polytechnic, the first tech-

nical school in this country, was established, and economics found a place at Harvard, Yale, Columbia, Bowdoin, Dartmouth and Princeton. American translations of Say's *Political Economy* and mathematical texts of Laplace and La Croie gave an impulse to these studies.

Yet in this same decade Yale University gave its powerful influence to a retroactive movement. The report of its committee on a liberal course of study, published in 1827, prescribed every subject that a liberal education demanded, and attempted to place the entire curriculum on a basis of formal discipline and to fix it once and for all in final perfection. The doctrines of this Report not only hindered progress at Yale for many years but cramped college programs wherever the influence of Yale was felt. Western Reserve College in Cleveland aimed to become the "Yale of the West," and many another little Yale preserved its conservative traditions in the West and South.

It was in 1822 that William and Mary College established the first professorship in history. Such teaching of history as had long

been given by professors in the classics and in theology was unsystematic and subsidiary to the traditional college subjects. Even after Jared Sparks, in 1839, became the first professor of history at Harvard College, the subject received but scant recognition in most colleges, and this as incidental to politics or philosophy. It was not until after the Civil War that Yale established a chair of history. The subjects of history and economics, as we know them to-day in American colleges, are thoroughly modern.

From the remarkable awakening of the third decade until the close of the Civil War, the development of the college curricula under the influence of such ideals was necessarily slow. The "new" ideas adopted at Cornell in 1867 were in essence those of the Amherst report of 1826. The whole period was one of conflict between the old doctrines and the *Lehr und Lernfreiheit* that inspired many an American student in Germany with a truly liberal idea of university study. If any date indicates roughly the final dominance of German ideals and the consequent beginnings of the modern period, it is the year 1869, when

Charles William Eliot became President of Harvard University. As the dominant influence on the early curricula was English, and later French, so the dominant influence during the latter half of the nineteenth century was German. Throughout the century the history of the college curriculum is the record of institutions, under conservative influences, forced by the growth of human knowledge and the demands of an increasingly complex civilization, to take up one new subject after another, and present them in more vital relations to present social, industrial and political needs.

It is in response to such felt needs, rather than in conformity with any theory of what should constitute a liberal education, that economics and sociology, in numerous branches, history, government and allied subjects, have such prominent places in the colleges of to-day. Courses in education, for example, were offered twenty-five years ago in barely half a dozen higher institutions; to-day they are found in nearly three hundred. Equally noteworthy during this period has been the development of college instruction in English language and literature.

In 1846, the Lawrence Scientific School was established at Harvard to offer a course parallel to the classical course and leading to the degree of B. S. From that time to the present day, at first slowly and then rapidly, scientific courses have taken their place in nearly all colleges. They have risen from suspicion, and from the real inferiority of their beginnings, until to-day the problem in many institutions is to save the traditional A. B. course from being crowded out by the more practical scientific studies. The adoption of the laboratory method has quickened the study of the sciences that thus edged their way into the programs of a century ago, and at the same time has brought recognition to geology, biology and psychology.

Finally, the general adoption of the Elective System, with or without requirements for concentration and distribution of studies, has left the subject-matter of the curriculum open to indefinite development, unhampered by the protective tariffs imposed by the formal discipline theorists of earlier days.



## CHAPTER II

### WILLIAM SMITH AND THE NEW EDUCATION IN PENNSYLVANIA

AT the founding of King's College, an advertisement appeared in the *New York Gazette or Weekly Post Boy* announcing courses of study so comprehensive as virtually to herald the coming of the Elective System to any person who grasped the significance of the new trend in education. This advertisement, dated May 31, 1754, and signed by "Your real Friend And most humble Servant, Samuel Johnson," declared that

"a *serious, virtuous*, and industrious Course of Life being first provided for, it is further the Design of this College to instruct and perfect the Youth in the Learned Languages, and in the Arts of *reasoning* exactly, and *writing* correctly, and *speaking* eloquently ; and in the Arts of *numbering* and *measuring*, of *Surveying* and *Navigation*, of *Geography* and *History*, of *Husbandry*, *Commerce* and *Government*, and in the Knowledge of *all Nature* in the *Heavens* above us, and in the *Air*, *Water*, and *Earth* around us, and in the various kinds

of *Meteors, Stones, Mines, and Minerals, Plants, and Animals*, and of every Thing *useful* for the Comfort, the Convenience and Elegance of Life, in the chief *Manufactures* relating to any of these Things; And, finally, to lead them from the Study of Nature to the Knowledge of themselves, and of the God of Nature, and their Duty to him, themselves and one another, and every Thing that can contribute to their true Happiness, both here and hereafter."

Some time before the institution that was to become Columbia University was actually started, a group of promoters of a college for the Province of New York had in mind an institution of higher learning quite different from Harvard and Yale with their meagre offerings for prospective ministers. The plans for the proposed college are set forth, with a completeness and breadth hitherto unknown in America, in a pamphlet called the *General Idea of the College of Mirania*.<sup>1</sup> At the outset this prospectus declared that there are two great classes of people to be educated by our colleges; first, those designed for the learned professions, and, second, those designed for the mechanical professions and all the remain-

<sup>1</sup> W. Smith, *Discourses on Public Occasions in America*, London, 1762. Second edition. Appendix II, No. 1.

ing people of the country.<sup>1</sup> Having thus enunciated a principle that shocked both Cambridge and New Haven, this pioneer pamphlet continued with a statement of educational doctrine that contained, potentially, the plan of voluntary study — a plan, we may note in passing, that just a century later was vigorously opposed by President Sparks at Harvard through both the Corporation and the Faculty.

This plan further declares that “Any scheme, that either proposes to teach both these grand classes after the same manner, or is wholly calculated for one of them, without regarding the other, must be very defective. And yet so it is, that public seminaries are almost universally calculated for the first class ; while a collegiate school for the instruction of the latter is rarely met with. This class of people, by far the most numerous, and also the hands and strength of every government, are overlooked, and have nothing but this alternative left them, either to be satisfied with what small portion of the arts and sciences they can glean at private schools, or to go

<sup>1</sup> W. Smith, *Discourses on Public Occasions in America*, p. 47. First published, 1753.

through a course of learning at colleges for which they have neither time nor use."

The curriculum of the College of Mirania is next set forth. This plan of studies is so comprehensive that had any attempt been made to carry it into effect as a prescribed course, it would have fallen down of its own weight. As no human being could have pursued half of its subjects in any reasonable number of years, the principle of election would have been the only possible relief. Indeed, the Miranians seem to have had some inkling of the impossibility of realizing their liberal plan according to the prevailing custom of requiring all students to take all the courses offered; for the *General Idea* provides masters of French, Italian, Spanish, German and Fencing, with the proviso that no student is obliged to attend any of these courses. These were to be "extra" studies. It is clear that the Miranians, although they devised a plan of study that could have been administered only on the elective principle, had nevertheless no clear conception of that principle.

An "extra" study was permitted in this same decade even at Harvard College. This is

mentioned by Paine Wingate, of the class of 1759, in a letter about the course in Hebrew. Mr. Monis, he says, "attended to the instruction of the scholars one afternoon in the week, but none were compelled to attend who did not choose to learn Hebrew, and but a small portion of the scholars paid any attention to his instruction, as a correct reading of Hebrew, according to Mr. Monis's rule of pronunciation, required considerable time and study."<sup>1</sup>

It has been inferred from this letter that "at the time that Mr. Wingate was in college, Hebrew seems to have become well-nigh what was afterwards known as an elective study."<sup>2</sup> There is, however, an important difference between such "extra" subjects, which students were allowed to take up in addition to their required work, and "elective" subjects, in the modern sense of the word, which students may substitute on even terms for subjects formerly prescribed. It is only in this modern sense that

<sup>1</sup> Benjamin Pierce, in writing his history of Harvard College, secured letters regarding the Course of Study from E. A. Holyoke, of the class of 1746, and Paine Wingate, of the class of 1759.

<sup>2</sup> L. F. Snow, *The College Curriculum in the United States*, p. 50.

the term "elective" will be here employed. Almost all American colleges introduced such "extra" subjects, in an apologetic way, long before they were ready to adopt the elective principle. But these "extra" subjects have never commanded academic respect, or the time devoted to the credited courses, until such extra subjects have become "electives" in the modern sense. Indeed, nearly every subject in the university catalogues of to-day, from Greek to Bookkeeping, began its career as a merely tolerated and uncredited side-study, or as the offering of some more or less despised private and unchartered enterprise.

Although the curriculum of the College of Mirania, like that of many a modern institution, never got beyond the paper stage, yet the author of this catholic scheme, William Smith, did have an opportunity to put into practice some of his remarkably progressive ideas. He became the first Provost of that "Academy" in Philadelphia which is now the University of Pennsylvania. Under the energetic leadership of this inspired young clergyman from England, the institution at once acquired dignity and definiteness of aim, and announced a

systematic course of study that prevailed from 1756 to the Revolution.

This course of study is virtually the Miranian plan adapted to the practical requirements of a three-year course. Realizing the absurdity of the prevailing idea of "completing" an education at college, and the impossibility of demanding of all students in a three-years' course every subject in a long list of equally valuable subjects, the new Provost seems on the point of enunciating and practicing the Elective System over a century ahead of his time. Instead, he adopted the alternative of placing in parallel columns the prescribed studies and those for "PRIVATE HOURS,—books recommended for improving the youth in various branches." In his account of the Academy at Philadelphia, 1762 (p. 126), William Smith said: "As to the plan of education, great care has been taken to comprehend every useful branch of it, without being burdensome, or launching into those that are unnecessary." Quite apart from the books recommended for private hours, however, the schedule was too extensive to be required of all students without danger of the superficial results that

later condemned all such ambitious prescribed programs of study.

To this schedule, he added the following explanation : —

Concerning the foregoing plan, it is to be remarked that life itself being too short to attain a perfect acquaintance with the whole circle of the sciences, nothing can be proposed by any scheme of collegiate education, but to lay such a general foundation in all the branches of literature, as may enable the youth to perfect themselves in those particular parts, to which their business or genius may afterwards lead them, and scarce anything has more obstructed the advancement of sound learning, than a vain imagination, that a few years, spent at college, can render youth such absolute masters of science, as to absolve them from all future study.

Those concerned in the management of this seminary, as far as their influence extends, would wish to propagate a contrary doctrine ; and though they flatter themselves that, by a due execution of the foregoing plan, they shall enrich their country with many minds, that are liberally accomplished, and send out none that may be justly denominated barren, or unimproved ; yet they hope, that the youth committed to their care, will neither at college, nor afterwards, rest satisfied with a general knowledge, as is to be acquired from the public lectures and exercises. They rather trust that those, whose taste is once formed for the acquisition of solid



wisdom, will think it their duty and most rational satisfaction, to accomplish themselves still further, by manly perseverance in private study and meditation. . . .

No doubt, those who compare this plan with what is laid down in the preceding essay, will think the term of three years too scanty a period for the execution of everything here proposed. And it must be acknowledged that a longer period would be necessary.

The significance of this program in the history of the college curriculum in America may be seen by comparing the senior studies provided at Philadelphia in 1756<sup>1</sup> with the senior studies provided just a century later at Cambridge, Massachusetts. In 1856, French was again made an "extra" study at Harvard, two of the three subjects Latin, Greek and mathematics were required throughout the Junior year, and at the same time the number of studies that a Senior or Junior could elect and receive credit for on the college books was reduced from two to one. In 1862, the elective studies of Senior year were limited to Latin, Greek, mathematics and advanced Italian.

<sup>1</sup> W. Smith, *Discourses*, pp. 116-117. Appendix IV, "An Account of the College and Academy of Philadelphia."

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 SENIOR YEAR STUDIES

AT PHILADELPHIA, 1756

AT CAMBRIDGE, 1856

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Ethics	
Natural and Civil Law	
Civil History	History
Laws and Government	Constitutional Law
Trade and Commerce	Political Economy
Light and Colours	Physics
Optics, etc.	
Perspective	
Astronomy	
Natural History of Vegetables	
Natural History of Animals	<i>Anatomy and Zoölogy</i>
Chemistry	
Of Fossils	<i>Geology</i>
Chemistry of Agriculture	
N. B. Through all the French may be studied at leisure hours	German
Greek	Greek
Latin	Latin or Spanish
English composition	Rhetoric, Themes, English Language
Declamation	Declamation
	<i>Italian</i>
Holy Bible recommended to be read daily	Religious Instruction
Declamation in Moral Subjects	
Philosophy acts held	

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“ Extra ” subjects in italics.

The liberality of this Philadelphia plan of studies and the sharpness of its departure from New England conceptions of the college course are further emphasized by contrast with the views of President Clap of Yale. The very year following the publication of William Smith's plan for the *College of Mirania*, the projected institution for the Province of New York, President Clap of Yale set forth in his *Religious Constitution of Colleges* (1754) the early colonial idea of a college education in its narrowest form. "Colleges," he said, "are *Religious Societies*, of a Superior Nature to all others. For whereas Parishes, are Societies, for training up the *Common People* ; Colleges, are Societies of Ministers, for training up persons for the Work of the *Ministry*. . . . Some indeed, have supposed, that, the only design of Colleges, was to teach the Arts, and Sciences. . . . But it is probable, that there is not a College, to be found upon Earth, upon such a Constitution."

Provost Smith tells us that his plan of studies was faithfully carried out in its details ; the note books of his own lectures show that the instruction in Natural and Moral Philosophy

was given as scheduled; and his great grandson assures us that this curriculum was adopted by James Madison in 1776 for the College of William and Mary.<sup>1</sup> Any person, however, who has looked into the abundant first-hand material concerning the long and active interest of Thomas Jefferson in the cause of higher education in America is ready to inquire whether the credit for the reformed curriculum of William and Mary may not belong, as Jefferson said, to Jefferson himself.

Indeed, to Thomas Jefferson we must now turn as the most interesting figure in the early history of the Elective System in America, — to Thomas Jefferson, author of the Declaration of Independence of American colleges from the traditional prescribed systems of Oxford and Cambridge.

President Madison, in a letter to President Stiles of Yale, August 27, 1780, gives an account of the College of William and Mary from the beginning in 1693 to the reformation of 1779. He says that the Professorship of Divinity has been abolished. "It was formerly insti-

<sup>1</sup> H. M. Smith, *Life and Correspondence of Rev. William Smith, D. D.*, vol. i, p. 124.

tuted for ye purpose of ye Church of England, wh. was here established, but it is now thought that Establishments in Favv. of any particular sect are incompatible with ye Freedom of a Republic." The next sentence strikes like a thunderbolt into the petrified old-world college customs that had up to this time shackled the college curriculum of the new world: "The Doors of ye University are open to all, nor is even a knowledge in ye ant. Languages a previous Requisite for Entrance. The Students have ye liberty of attending whom they please, and in what order they please, or all ye diffv. Lectures in a term if they think proper. The time of taking Degrees was formerly ye same as in Cambridge, but now depends upon ye Qualifications of ye candidate. He has a certain course pointed out for his first Degree, and also for ye next. When Master of Either, ye Degree is conferred."

Although this new plan of studies for the College of William and Mary was not the Elective System as we now understand it,—since certain courses were pointed out for certain degrees,—yet the gates of the college were opened wide; and while the Revolutionary

forces were achieving political freedom on the battlefield, academic freedom was achieved in the field of higher education. For at William and Mary, at least one of the principles was recognized that Thomas Jefferson at this time formulated and later realized more effectively in the University of Virginia. Where can we find the origin of the idea? Shall we credit the words of the biographer of William Smith, his own great-grandson, that Jefferson owed the idea to Smith? If so, we shall have to overlook the total absence of any evidence that Jefferson ever heard of Smith's program. Yet Jefferson wrote and talked at length of numerous other plans for higher education that he had examined with care, and he was always frank and generous in recognition of whatever seemed to him good. It is highly improbable that Jefferson felt, and failed to credit, the influence of Dr. Smith. Moreover, as we have seen, the writings of the author of *Mirania* give nowhere a clear expression of the elective principle that was potentially carried by his extensive plans of study. We must look elsewhere for the origin of Jefferson's ideas on higher education.

## CHAPTER III

### THOMAS JEFFERSON AND THE ELECTIVE SYSTEM AT THE UNIVERSITY OF VIRGINIA

It was at Williamsburg, at the College of William and Mary, that Thomas Jefferson, of Albemarle, the son of a Virginia planter, received his early ideas of higher education. And the first efforts of his life-long struggle for the establishment of a university were directed toward the transformation of William and Mary College into a state university. This memorable college of the Church of England, next to Harvard the oldest college in America, enjoyed the services of Jefferson who, as Governor of Virginia, was one of the Visitors of its college. But this staid old institution, modeled on the inflexible Oxford type, and owing allegiance to an established Church, could hardly have inspired Jefferson with his ideas of academic breadth and freedom. Even after the reformation that Jefferson helped to bring about, the student at William and Mary, as

we have already observed, had a certain course pointed out for his first degree, and also for his second. Nor could Jefferson's ideas have reached him through Harvard, Yale or Princeton,—all of them at that time slavish followers of the English type of university.<sup>1</sup> We must look rather to the influence of European institutions.

It is certain that Jefferson was living in Paris at the very time that the Chevalier

<sup>1</sup> The curriculum for the B. A. Course at Cambridge University (Trinity College) at this time, as given by M. Russel in his *View of the System of Education . . . of Scotland*, Appendix I (Edinburgh, 1813), was as follows:—

I. (1) Term A Greek play and Euclid.

(2) “ A Greek prose author, algebra and arithmetic.

(3) “ Some Latin author and plane trigonometry.

II. (1) “ Mechanics.

(2) “ Spherical trigonometry, conic sections, the gospel of St. Luke, Locke, and Paley.

(3) “ Astronomy.

III. Principia of Newton, fluxions and increments, higher parts of algebra, arithmetic of sines.

This is the prescribed range for the lectures.

There are lectures on chemistry, mineralogy, theology, on civil law, on domestic medicine, on Arabic, on experimental philosophy, on modern history, on the laws of England. The attendance on these lectures is optional.



Quesnay de Beaurepaire, inspired with the enthusiasm of a Lafayette for this young country, conceived the brilliant scheme of establishing in the capital of Virginia a kind of French Academy of Arts and Sciences, with branches in all the principal cities of the new world.<sup>1</sup> Quesnay succeeded in securing subscriptions from nearly a hundred of the leading men of Virginia; and, although Jefferson's name does not appear on the list of first subscribers, his name was conspicuously used by the promoters of the Academy throughout the United States. Jefferson certainly favored the idea. It had much in common with the project for a state university in Virginia to which he later gave such devotion; and the boldness of the Chevalier's design for scattering French culture and science broadcast through the American wilderness is recalled

<sup>1</sup> A more comprehensive account of the services of Thomas Jefferson to higher education is given in *Thomas Jefferson and the University of Virginia*, by Herbert B. Adams, which is Circular of Information No. 1, 1888, of the United States Bureau of Education. Almost equally valuable is the same author's *College of William and Mary; a contribution to the history of higher education*, United States Bureau of Education; Circular of Information No. 1, 1887. See also the Bibliography in the Appendix of this volume.

when, after the failure of the French plan, we find Jefferson urging the first President of the Republic to support his astounding scheme for uprooting the entire faculty of the Academy of Geneva and planting it in the State of Virginia.<sup>1</sup>

It would be interesting to speculate on the possible results, had the proposed Academy of the United States of America for the diffusion of French influence been established according to the liberal plans of its projectors. It is sufficient for our purposes to note that the very year after the publication of Quesnay's pamphlet,<sup>2</sup> the French Revolu-

<sup>1</sup> *Writings*, ix, 291, 297. The letter from Jefferson to Washington, the original of which is in the government collection, is reproduced in the *Writings*, xix, 108.

<sup>2</sup> *Mémoire, Statuts et Prospectus concernant l'Académie des Sciences et Beaux-Arts des États-Unis de l'Amérique, établie à Richemond, capitale de la Virginie ; présentés à Leurs Majestés, et à la Famille Royale, par le Chevalier Quesnay de Beaurepaire. A Paris, de l'Imprimerie de Cailleau, Imprimeur de l'Académie de Richemond, rue Gallande, No. 64, 1788, 118 pp.*

Professor Adams says of this valuable source, "If it had not been for one copy of Quesnay's Memoir, picked up years afterward among the drift-wood of the Revolutionary period by President Andrew D. White, it is doubtful whether the project for a French academy in Richmond would have

tion broke out in all its mad fury ; and in its rapacious grave, along with many another bright hope, was buried the prospect for a French Academy of Arts and Sciences in America. And so it happens that the main chapter in a history of the New Education in America must concern itself with the founding of the University of Virginia. As that institution is said to be "the lengthened shadow of one man," so it is true that the Elective System in American higher education is the lengthened shadow of that same Thomas Jefferson.

The extent of French influence on Jefferson's ideas is difficult to estimate. He himself tells us that he met in Paris some of the Geneva teachers and other leading representatives of French university culture. During his study of the universities of Europe from 1784 to 1789, Jefferson at first thought Rome the most attractive of them all. After his meeting with Swiss professors, he came to regard Geneva as the type most worthy of imitation. He called Edinburgh and Geneva "the found its present place in the educational history of Virginia."

two eyes of Europe.”<sup>1</sup> It was in 1794 that the faculty of Geneva, through Jefferson, endeavored to secure the coöperation of the Virginia legislature in a project for moving the College bodily to America. Although the ardor of Jefferson for this impractical scheme was somewhat cooled by the sensible objections of Washington, there is no doubt that Jefferson was deeply impressed with French institutions. This much is certain : Quesnay’s proposed “Schools” of higher learning, which received the favor of Jefferson, so nearly covered the main departments of a twentieth century university that the studies could have been administered only on some kind of an elective basis. Furthermore, the whole idea tended toward the liberal principles that Jefferson embodied, nearly two score years later, in the first plan of study at Charlottesville. Finally,

<sup>1</sup> *Writings*, xix, 109.

In 1795 he wrote to Washington, “The colleges of Geneva and Edinburgh were considered as the two eyes of Europe in matters of Science, insomuch that no other pretended to any rivalry with either.” See also *Writings*, ix, 291. In 1791, Jefferson wrote to Mr. McAlister, “With respect to the schools of Europe my mind is perfectly made up, and on full inquiry. The best in the world is Edinburgh.”

it is significant that Jefferson, on his return from Paris, abandoned all hope of instilling new life into the decrepit College of William and Mary.

After his return from France, Jefferson declined to coöperate with De la Coste, a French scientist, and Joseph Cabell, in their attempts to provide the College of William and Mary with a museum of natural history. Through his private secretary, Jefferson advised Cabell in 1807 as follows: "Instead of wasting your time in attempting to patch up a decaying institution, direct your efforts to a higher and more valuable object. *Found a new one which shall be worthy of the first State in the Union.* This may, this certainly will one day be done; and why not now? *You may not succeed in one session, or in two, but you will succeed at last.*" Later he wrote to Dr. Cooper: "The long and lingering decline of William and Mary, the death of its last president, its location and climate, force on us the wish for a new institution more convenient to our country generally, and better adapted to the present state of science."

Among the sources of French influence

upon the university ideas of Thomas Jefferson must be included a work on *National Education in the United States*, completed near New York in 1800 and published in Paris. The author, Dupont de Nemours, said that he wrote the treatise at the request of Jefferson, then Vice-President of the United States. The comprehensive plan of education developed in this treatise breaks away from the traditional college organization, with its four faculties of theology, law, medicine and philosophy. The new plan provides for a grand system of education, national in its scope and control, from elementary schools to the highest types of technical and professional schools. It contemplates a system of centralized administration of education that this country is as far from attaining in the present century as it was at the beginning of the last century. And yet, profoundly interested as Jefferson must have been in the plan of Dupont de Nemours, the influence of this writer on Jefferson's views has probably been overestimated.<sup>1</sup> Before 1800, Jefferson himself had outlined

<sup>1</sup> John B. Minor, in the *Old Dominion Magazine*, March 15, 1870. But cf. Jefferson's letters to Dr. Joseph Priestly.

equally broad courses of university study. Furthermore, — and this is the point of our immediate interest, — neither in this French scheme of 1800, nor in the other sources of French influence, do we find any such expression as Jefferson himself gave of the principle of unrestrained freedom of choice as applied to the undergraduate studies of the college curriculum.<sup>1</sup>

Nor could Jefferson's radical views have been stimulated by his correspondence with such crabbed conservatives as Dr. Cooper and President Dwight, to whom he turned for advice. The educational views of Dr. Thomas Cooper, then Professor of Chemistry in Carlisle College, Pennsylvania, Jefferson seems to have held in higher regard than those of any other man in academic life, with the exception of Dr. Joseph Priestly.<sup>2</sup> Yet Cooper, in a letter advising the Governor of Virginia about

<sup>1</sup> F. Lot, *L'enseignement supérieure en France ; ce qu'il est et ce qu'il devrait être*. Paris, 1891.

L. Laird, *L'enseignement supérieure en France : 1789-1893*. Paris, 1888-94. 2 vols.

L. von Savigny, *Die französischen Rechtsfakultäten*. Berlin, 1891.

<sup>2</sup> *Writings*, x, 141.

the plan of studies for the new university, says: "The basis of the system being classical and mathematical knowledge, I should not fear for a young man who was well grounded in these alone." Nothing could be farther from the ideal of Jefferson. President Dwight proved an equally useless adviser. Verbosely evading Jefferson's questions, he sent a copy of the Yale Laws of 1816, adding that "*here* these laws have had a happy efficacy." Prescribed Latin, Greek and mathematics, with some moral philosophy, — this was virtually the suggestion of Yale's president to a man who was about to declare the independence of American institutions from the tyranny of that ancient Triumvirate.

In view of the liberality of Jefferson's university ideas, it is easy to understand why he regarded Edinburgh as one of the eyes of Europe. The model for Edinburgh was the very institution that Jefferson had endeavored to transplant in America. The Scottish Kirk still looked to Geneva as the fountain-head of its doctrine and discipline, — the same Geneva that had been the asylum for refugee Scottish



reformers from 1554 to 1560.<sup>1</sup> And the University at Geneva in the eighteenth century became the leading French exponent of the German idea of university freedom. Halle, the first university to declare the principle of *libertas philosophandi*, of free research and instruction, had been founded in 1694.<sup>2</sup> Göttingen, which soon surpassed Halle, was founded in 1737. Meantime we find the same breakdown of mediæval ideas in the University of Edinburgh.

Under the new Arts curriculum of 1708 at Edinburgh, the faculty became one of specialized professors, in contrast to the class tutorial systems of English universities. There is also evidence of a reaction against the Procrustean uniformity of the old system, and the introduction even at this early date of *Lehr-und Lern Freiheit*,<sup>3</sup> under which teaching and

<sup>1</sup> A. Grant, *Story of the University of Edinburgh*, vol. i, p. 126.

<sup>2</sup> In 1711, when Halle celebrated the birthday of its founder, Professor Gundling declared: *Veritas adhuc in medio posita est; qui potest, ascendat, qui andet, rapiat: et applaudemus.* (Paulsen, *German Universities*.)

<sup>3</sup> Paulsen defines *Lernfreiheit* (in *German Universities*, p. 201) as follows:

“Freedom for the learner, *Lernfreiheit*, is the corollary of

learning came to be more desired than a fixed term of residence and graduation.<sup>1</sup> From 1778 onward, attendance at the Arts classes was purely voluntary.

freedom for the teacher. As the latter is implied in the assumption that the academic teacher is an independent investigator, so the former is implied in the demand that the student be led on to independence of thought. And, like the *Lehrfreiheit*, the *Lernfreiheit* in German Universities is to-day as good as unlimited. The student selects for himself his instructors and course of study, as well as his university and his profession; what lectures he shall attend, in what exercises he shall take part, depends entirely on his will; there is no exertion of official influence, hardly so much as advice is given him; and he is at liberty to choose to attend no lectures and to do no work."

Oesterley gives the current practice at Göttingen :

"Der unschätzbare Vorzug unsere deutschen Universitäten, Freiheit im Lehren und im Lernen, ist in Göttingen unverkümmert anfrecht erhalten. Jeder Lehrer kann in den Grenzen seiner Facultät, — bei Privatdocenten nach Maassgabe der ihnen ertheilten Befugniss — lehren was und in welchen Stunden er will und wenn auch s. g. Nominalprofessoren ertheilt sind, so hindert dies andere Lehrer nicht, über die dahin gehörenden gegenstände zu lesen. Jedem Studirenden steht es frei, welche Vorlesungen und bei welchem Lehrer er sie hören will."

Oesterley, *Geschichte der Universität Göttingen*, p. 182. Göttingen, 1838.

<sup>1</sup> An article concerning the studies at Edinburg was written by Colin Drummond in 1731, and printed in the *Scots Magazine* for 1829. Programs of the classes are given in *Scots Magazine* for 1741.

At the beginning of the nineteenth century Edinburgh was the leading exemplary in Great Britain of the *Lernfreiheit* and *Lehrfreiheit* that Halle and Göttingen had long practiced in Germany.

Accordingly Edinburgh was roundly condemned by scholars indoctrinated with the Oxford idea of a university education. We shall allow one of these contemporary scholars to tell us how Edinburgh appeared to him at the time it won such high favor with Jefferson. "The students at Edinburgh," said M. Russel<sup>1</sup> in 1813, "are not subjected to compulsory attendance, or to a regulated plan of study, because such means are not reconed necessary for their improvement. . . . Every one is left to study, or not to study, just as his inclination, unaided and unprompted, shall direct him." After declaring that "there

<sup>1</sup> M. Russel, *View of the system of education . . . in the schools and universities of Scotland*, pp. 162 ff., Edinburgh, 1813. John Moir.

We know that Jefferson owned a copy of Russel's tract on the Universities of Great Britain and loaned it to Cabell.

See also the approving reference to Edinburgh in the letter of Jefferson to Ticknor reproduced at the close of this chapter.

reigns an uninterrupted stagnation of animal spirits, an eternal sinecure within her walls," the writer declares that, in unhappy contrast to the practices of other universities, the order in which the classes are attended at Edinburgh "rests entirely with the students. . . . The jurisdiction and regimen of Edinburgh are exceedingly lax. . . . The voluntary attendance of the students is a strong proof of this allegation." The writer sums up his condemnation of the Edinburgh plan of administering the course of study with the sarcastic observation that "if the University of Edinburgh has fallen upon the best plan of teaching, she has the merit of exclusive excellence."<sup>1</sup>

It seems safe to conclude that Jefferson was considerably influenced in the formulation of his Elective System by the contemporary advanced administration of the University of Edinburgh. Whatever may have been the influence of Germany on the Scotch reformers, and on the French promoters of American education with whom Jefferson was well ac-

<sup>1</sup> The contemporary curriculum at Cambridge University (Trinity College) is given on page 38 above.

quainted, there is no evidence that Jefferson was directly impressed by the voluntary systems of German universities.<sup>1</sup> On the contrary, we find him declaring that "the Germanic body is a burlesque on government; and their practice, on any point, is a sufficient authority and proof that it is wrong."<sup>2</sup> This

<sup>1</sup> Prof. J. M. Garnett, in the *Andover Review*, April, 1886, says that the plan of having the Chairman of the Faculty of the University of Virginia appointed annually by the Board of Visitors was "a pet idea of Mr. Jefferson's, derived, perhaps, from the annual election of a Rector Magnificus in the German universities." But why speculate on a foreign origin for this idea, when most of our own state and national officers, from the President down, had short terms to guard against the dangers of autocracy which the men of Revolutionary days had reason to fear. If we must seek a European precedent, it would be more reasonable to look to the University of Paris, the organization of which we are sure that Jefferson studied. There, in the thirteenth century, the tenure of office of the Rector was only three months. (Cf. H. Rashdall, *Universities of Europe in the Middle Ages*, i, p. 315; Bulaeus, iii, 444; *Chartul.* t. i. pt. 1, No. 492.)

It is interesting to trace at this same time the influence of Edinburgh in the founding of the first American high schools, at Boston, 1821, and at New York, 1825. An account of John Griscom's visit to Edinburgh and study of the city schools is given in the *North American Review*, January, 1824 (published in Boston). See also E. E. Brown, *Making of Our Middle Schools*, pp. 304 ff.

<sup>2</sup> *Writings*, i, 52.

we must bear in mind when we consider the relations of George Ticknor with Thomas Jefferson, the efforts of Ticknor for academic freedom at Cambridge, and the question to what extent Harvard College owes the beginnings of its Elective System to German influence.

The first clear statement of the conviction that led Jefferson to the adoption of an Elective System is found in a letter to Peter Carr, President of the Trustees of Albemarle Academy, dated September 7, 1814. It tells of Jefferson's comparative study of numerous curricula at home and abroad, — a kind of study which, in the course of the next century, was to convince most men of the futility of prescribed courses of study. This letter first appeared in the *Richmond Enquirer*. It defines Jefferson's educational views more than thirty years after he first drafted a bill for the more general diffusion of knowledge. In summarizing his views, Jefferson said :

I have long entertained the hope that this, our native State, would take up the subject of education, and make an establishment, either with or without incorporation into that of William and Mary, where every branch

of science, deemed useful at this day, should be taught in its highest degree. With this view, I have lost no occasion of making myself acquainted with the organization of the best seminaries in other countries, and with the opinions of the most enlightened individuals on the subject of the sciences worthy of a place in such an institution. In order to prepare what I had promised our trustees, I have lately revised these several plans with attention ; and I am struck with the diversity of arrangement observable in them, no two being alike. Yet I have no doubt that these several arrangements have been the subject of mature reflection by wise and learned men, who, contemplating local circumstances, have adapted them to the condition of the section of society for which they have been framed. I am strengthened in this conclusion by an examination of each separately, and a conviction that no one of them, if adopted without change, would be suited to the circumstances and pursuit of our country. The example they have set, then, is authority for us to select from their different institutions the materials which are good *for us*, and, with them, to erect a structure whose arrangement shall correspond with our own social condition, and shall admit of enlargement in proportion to the encouragement it may merit and receive.

After the failure in the Virginia Senate of the elaborate education bill of 1817, Jefferson drew up a bill providing more definitely for a state university. Here he proposed to have the following subjects offered : “ history and

geography, ancient and modern ; natural philosophy, agriculture, chemistry, and the theories of medicine ; anatomy, zoölogy, botany, mineralogy, and geology ; mathematics, pure and mixed ; military and naval science ; ideology, ethics, the law of nature and of nations ; law, municipal and foreign ; the science of civil government and political economy ; languages, rhetoric, belles-lettres, and the fine arts generally ; which branches of science shall be so distributed and under so many professorships, not exceeding ten, as the visitors shall think most proper.”<sup>1</sup> Evidently the scope of the instruction was such that it could never be confined within the limits of the traditional prescribed curriculum.

To observe, even at the distance of nearly a century, the solicitude with which this patriot of seventy-five years followed the fortunes of his long-cherished hope for a system of public education, makes one glow with admiration and sympathy. To Cabell, whom he had inspired to further the cause in the legislature, Jefferson wrote : “ Pray drop me a line when any vote is passed which furnishes an

<sup>1</sup> *Writings*, xvii, 436.



indication of the success or failure of the general plan. I have only this single anxiety in this world. It is a bantling of forty years' birth and nursing, and if I can once see it on its legs, I will sing with sincerity and pleasure my *nunc dimittas*." A month later he wrote, "A system of general instruction which shall reach every description of our citizens, from the richest to the poorest, *as it was the earliest, so will it be the latest of all the public concerns in which I shall permit myself to take an interest*. Nor am I tenacious of the form in which it shall be introduced. Be that what it may, our descendants will be as wise as we are, and will know how to amend and amend it until it shall suit their circumstances. Give it to us, then, in any shape, and receive for the inestimable boon the thanks of the young, and the blessings of the old, who are past all other services but prayers for the prosperity of their country and blessings to those who promote it."

One of the brightest hopes of the Republic springs from the fact that the dreams of this prophet, Utopian as they then appeared, are the realities of to-day, and that there arises

now and again, above the dreary level of politicians, a statesman-educator with the wisdom and sacrificial devotion of a Jefferson.

In 1818, the Virginia Legislature provided a \$15,000 annual appropriation for a university to teach all branches of useful science. The same year a Board of Commissioners, appointed by the Governor, met at the tavern in Rockfish Gap, in the Blue Ridge, to make plans for the new institution.<sup>1</sup> As a matter of course, Jefferson was unanimously elected President of the board of trustees. In his report to the legislature, he formulated the aims of higher education with such wisdom and foresight that the most progressive state universities of the present day are only beginning to realize his ideals. In this report he classified the objects of the higher education as follows:

(1) To form the statesmen, legislators, and judges, on whom public prosperity and individual happiness are so much to depend;

(2) To expound the principles and structure of government, the laws which regulate the intercourse of nations, those formed municipally for our own govern-

<sup>1</sup> For an account of this meeting, see "Jefferson's Pet," an article by Professor Schele de Vere, of the University of Virginia, *Harper's Magazine*, May, 1872.

ment, and a sound spirit of legislation, which, banishing all unnecessary restraint on individual action, shall leave us free to do whatever does not violate the equal rights of another ;

(3) To harmonize and promote the interests of agriculture, manufactures, and commerce, and by well-informed views of political economy to give a free scope to the public industry ;

(4) To develop the reasoning faculties of our youth, enlarge their minds, cultivate their morals, and instil into them the precepts of virtue and order ;

(5) To enlighten them with mathematical and physical sciences, which advance the arts, and administer to the health, the subsistence, and comforts of human life ;

(6) And, generally, to form them to habits of reflection and correct action, rendering them examples of virtue to others, and of happiness within themselves.

The branches of learning to be taught were those heretofore recommended by Jefferson, but now arranged in ten homogeneous groups, to be assigned to ten different professorships, as follows :

I. Languages, ancient :

Latin,

Greek,

Hebrew.

II. Languages, modern :

French,

Spanish,

Italian,  
German,  
Anglo-Saxon.

III. Mathematics, pure :

Algebra,  
Fluxions,  
Geometry, elementary, transcendental,  
Architecture, military, naval.

IV. Physico-mathematics :

Mechanics,  
Statics,  
Dynamics,  
Pneumatics,  
Acoustics,  
Optics,  
Astronomy,  
Geography.

V. Physics, or natural philosophy :

Chemistry,  
Mineralogy.

VI. Botany :

Zoölogy.

VII. Anatomy :

Medicine.

VIII. Government :

Political economy,  
Law of nature and nations,  
History, being interwoven with politics and  
law.

## IX. Law, municipal.

## X. Ideology :

General grammar,

Ethics,

Rhetoric,

Belles-lettres and the fine arts.

At a meeting of the Visitors of the University, held at Charlottesville, October 4, 1824, at which there were present Thomas Jefferson, James Madison, James Breckenridge, John H. Cocke, George Loyall, and Joseph C. Cabell, the following resolutions were entered on the records :

“Each of the schools [*i. e.* subjects] of the University shall be held two hours of every other day of the week; and that every student may be enabled to attend those of his choice, let their sessions be so arranged, as to days and hours, that no two of them shall be holden at the same time.” Here follows the first schedule of wholly elective studies ever devised for an existing institution of higher education in America. That there might be no doubt of their intentions, this remarkable group of trustees — Governors of states and Presidents of the United States — added the following reso-

lution: "Every student shall be free to attend the schools of his choice, and no other than he chooses."

The University of Virginia was opened to students on the 7th of March, 1825. Jefferson, in his seventh annual report to the President and Directors of the Literary Fund, dated October 7, 1825, said there were forty students present at the beginning; "others continued to arrive from day to day at first, and from week to week since; and the whole number matriculated on the last day of September was 116. Few more can be expected during the present term, which closes on the 15th of December next; and the state of the schools on the same day was as follows:

"In the school of	Scholars. <sup>1</sup>
Ancient languages . . . . .	55
Modern languages . . . . .	64
Mathematics . . . . .	68
Natural philosophy . . . . .	33
Natural history . . . . .	30
Anatomy and medicine . . . . .	20
Moral philosophy . . . . .	14 "

<sup>1</sup> Reprinted in the first volume of the *American Journal of Education*, 1826, p. 123.

This is the first table of electives published in the United States.

If any one had doubted the determination of Jefferson to introduce this complete Elective System<sup>1</sup> at the very opening of the school, such doubt would have been dispelled if one could have stood in his study at Monticello on the 16th of July, 1823, and looked over the shoulder of the father of the university, as he wrote to George Ticknor, then a professor in Harvard College:

DEAR SIR, — I received in due time your favor of June 16th, and with it your syllabus of lectures on Spanish literature. I have considered this with great interest and satisfaction, as it gives me a model of the course I wish to see pursued in the different branches of instruction in our University; *i. e.* a methodical, critical, and profound explanation by way of protection of every

<sup>1</sup> One can speak of a complete Elective System at Virginia only with the proviso laid down by its first Faculty: "The degree of graduate shall be conferred on those only who have acquired an *accurate and extensive knowledge* of the subject of one or more of the classes, or in any single language. But it is to be understood that in all cases the candidate shall give the Faculty satisfactory proof of his ability to write the English language correctly." Plan of *Examinations* proposed by the Faculty of the University of Virginia to its visitors. Printed in *American Journal of Education*, ii, 313 (1827).

science we propose to teach. I am not fully informed of the practices at Harvard, but there is one from which we shall certainly vary, although it has been copied, I believe, by nearly every college and academy in the United States. That is, the holding the students all to one prescribed course of reading, and disallowing exclusive application to those branches only which are to qualify them for the particular vocations to which they are destined. We shall, on the contrary, allow them uncontrolled choice in the lectures they shall choose to attend, and require elementary qualification only, and sufficient age. Our institution will proceed on the principle of doing all the good it can without consulting its own pride or ambition; of letting every one come and listen to whatever he thinks may improve the condition of his mind. The rock which I most dread is the discipline of the institution, and it is that on which most of our public schools labor. The insubordination of our youth is now the greatest obstacle to their education. We may lessen the difficulty, perhaps, by avoiding too much government, by requiring no useless observances, none which shall merely multiply occasions for dissatisfaction, disobedience and revolt, by referring to the more discreet of themselves the minor discipline, the graver to the civil magistrates, as in Edinburgh. On this head I am anxious for information of the practices of other places, having myself had little experience of the government of youth. I presume there are printed codes of the rules of Harvard, and if so, you would oblige me by sending me a copy, and of those of any other academy which you think can furnish anything useful. You flatter



me with a visit "as soon as you learn that the University is fairly opened." A visit from you at any time will be the most welcome possible to all our family, who remember with peculiar satisfaction the pleasure they received from your former one. But were I allowed to name the time, it should not be deferred beyond the autumn of the ensuing year. Our last building, and that which will be the principal ornament and keystone, giving unity to the whole, will then be nearly finished, and afford you a gratification compensating the trouble of the journey. We shall then, also, be engaged in our code of regulations preparatory to our opening, which may, perhaps, take place in the beginning of 1825. There is no person from whose information of the European institutions, and especially their discipline, I should expect so much aid in that difficult work. Come, then, dear Sir, at that, or any earlier epoch, and give to our institution the benefit of your counsel. I know that you scout, as I do, the idea of any rivalry. Our views are catholic for the improvement of our country by science, and indeed, it is better even for your own University to have its yoke-mate at this distance, rather than to force a nearer one from the increasing necessity for it. And how long before we may expect others in the southern, western, and middle region of this vast country?

I send you by mail a print of the ground-plan of our institution; it may give you some idea of its distribution and conveniences, but not of its architecture, which being chastely classical, constitutes one of its distinguishing characters. I am much indebted for your kind attentions to Mr. Harrison; he is a youth of promise. I could not

deny myself the gratification of communicating to his father the part of your letter respecting him.

Our family all join me in assurances of our friendly esteem and great respect.

This letter is here printed in full because it is one of the most important documents in the history of higher education, because it states clearly the principle of "uncontrolled choice," and because it connects the subject of our present inquiry with the subject that logically follows: George Ticknor and the Beginnings of the Elective System at Harvard College.

## CHAPTER IV

### GEORGE TICKNOR AND THE BEGINNINGS OF THE ELECTIVE SYSTEM AT HARVARD COLLEGE

A RECENT historian of higher education in America voices the common belief when he concludes that "in the whole movement for the enlargement and enrichment of the higher education through either the elective or other system, the German influence has been dominant."<sup>1</sup> That the German influence was not dominant in the establishment of the first Elective System of studies in America, the evidence just presented tends to prove. An interesting question remains: To what extent did German influence promote the beginnings of that system in the institution that became its greatest modern champion? In other words, what were the sources of the inspiration of George Ticknor in his efforts for reform at Harvard College?

<sup>1</sup> C. F. Thwing, *A History of Higher Education in America*, p. 318.

Surely there was nothing very inspiring in his course at Dartmouth College. He himself tells us that before he was ten years old, President Wheelock and other members of the Dartmouth faculty examined him in Cicero's Orations and the Greek Testament and gave him a certificate of admission. "Of course," he adds, "I knew very little, and the whole thing was a form, perhaps a farce." When he was fourteen, he was admitted to the Junior Class. Of his two years there, 1805 to 1807, he says :

I learnt very little. The instructors generally were not as good teachers as my father had been, and I knew it ; so I took no great interest in study. I remember liking to read Horace, and I enjoyed calculating the great eclipse of 1806, and making a projection of it, which turned out nearly right. This, however, with a tolerably good knowledge of the higher algebra, was all I ever acquired in mathematics, and it was soon forgotten. I was idle in college, and learnt little.

Soon after I left college, — in 1807, — my father, who had a great regard for classical learning, and knew that I had acquired very little of it, proposed to me to study with the Rev. Sylvester John Gardiner, Rector of Trinity Church, who was in the habit of preparing a few pupils for Harvard College.

To what extent Ticknor's views on college education were influenced by his years at the

University of Göttingen is another question. Certainly he was profoundly impressed. His letters home and his journals give abundant evidence of his great admiration for the resources of the most favored of German universities, for the earnestness and devotion of the students, for the scholarship of some of its great teachers. But with all his detailed accounts of other phases of German university life, he makes no contrasts between the voluntary systems of that country and the prescribed systems of his own. Moreover, as the above comments on his life at Dartmouth were offered to show, there was no comparison possible at this time between the American college and the German university. The only German institutions with which Ticknor and the other Americans abroad could have compared Harvard, Yale and Dartmouth were the gymnasia. They were then, as now, preparatory schools for the universities. The special Committee of the Yale faculty in 1828 correctly stated the facts in declaring that "the pupils, when they enter the University [in Germany] are advanced nearly or quite as far, in literature if not in science, as our students

are when graduated. The institution in Germany which corresponds most nearly to our colleges, in point of attainments, and the age of the students, is the gymnasium." In this school the course of study was rigidly prescribed and remained so for some years to come.<sup>1</sup>

<sup>1</sup> Paulsen, in *Geschichte des Gelehrten Unterrichts*, p. 351, gives the *Lehrplan* of the Gymnasia for 1837, showing that even then there were no electives in the schedule. The usual approach to the Elective System is here seen, however, in the presence of Hebrew as an "optional" or "extra" study.

## DER LEHRPLAN VON 1837

## LEHRGEGENSTÄNDE

	I	II	III	IV	V	VI	SUMME
Lateinisch . . . . .	8	10	10	10	10	10	86
Griechisch . . . . .	6	6	6	6			42
Deutsch . . . . .	2	2	2	2	4	4	22
Französisch . . . . .	2	2	2				12
Religionslehre . . . .	2	2	2	2	2	2	18
Mathematik . . . . .	4	4	3	3			} 33
Rechnen . . . . .					4	4	
Physik . . . . .	2	1					6
Philosoph. Propädeutik	2						4
Geschichte u. Geographie	2	3	3	2	3	3	24
Naturbeschreibung . .			2	2	2	2	10
Zeichnen . . . . .				2	2	2	6
Schönschreiben . . . .				1	3	3	7
Gesang . . . . .			2	2	2	2	10
(Hebräisch) . . . . .	(2)	(2)					8
	30	30	32	32	32	32	280

In any estimate of the early influence of German universities on the administration of the Course of Study in American colleges, the work of Edward Everett must be given great weight. His name appears in the Colony Book as a student at Göttingen from 1812-14 to 1817; and apparently the only American to precede him was Benjamin Smith Barton, who is entered as from Philadelphia in the year 1789. In 1815-16, Ticknor and Everett were apparently the only Americans at Göttingen, and they were close friends. Their influence on each other at this plastic time of life must have been considerable. The question is therefore highly pertinent to what extent Everett was inspired by his years at Göttingen to promote the Elective System at Harvard College. In answer to this question, it has been said<sup>1</sup> that the residence in the same town of George Ticknor and Edward Everett "created a profound and what proved to be a lasting influence. The most direct effect of this residence is seen in the changes wrought in the Harvard curriculum through

<sup>1</sup> C. F. Thwing, *A History of Higher Education in America*, p. 310.

George Ticknor." The evidence about to be presented tends to prove, on the contrary, that the direct influence of this residence prompted neither Everett nor Ticknor to promote the Elective System at Harvard College.

The Inaugural Address of Edward Everett as President of Harvard College, in 1846, was mainly the traditional defense of the Classics and the doctrine of formal discipline in its worst form, together with certain strictures on the prevailing curriculum that looked rather to its curtailment than to its expansion. His remarks on the voluntary plan of studies show that, far from having been won to the cause of the New Education in Germany, he had not even in 1846, a score of years after the publication of Ticknor's *Remarks*, become a disciple of his Göttingen companion. "The Elective System," he says, "has within a few years been introduced among us, which, under the proper reservations, affords the student a choice of those studies deemed most likely to promote views of future usefulness, or to fall in with the present taste or bent of the faculties. The theory of this system seems reasonable; it has, however, been introduced



since my own academical experience terminated, and I have had as yet no means of forming an opinion for myself of its practical operation." After he did form an opinion, he became one of those Presidents of Harvard College whose opposition to the Elective System retarded the progressive movements for another generation. And this was the man who had been longest exposed to German influence.

Mr. Ticknor has left us even more positive evidence of the influence of German universities on his views. In a letter to Mr. N. A. Haven, October 26, 1825, he says: —

When I came home from Europe (1819), not having been educated at Cambridge, and having always looked upon it with great veneration, I had no misgivings about the wisdom of the organization and management of the College there. I went about my work, therefore, with great alacrity and confidence; not, indeed, according to a plan I proposed in writing, . . . but according to the established order of things, which I was urged to adopt as my own, and which I did adopt very cheerfully. In about a year and a half, I began to find out that there was much idleness and dissipation in College, of which the resident teachers were ignorant, and I began to feel that \$2000 per annum were spent nominally to teach the French and Spanish languages and literatures, when in fact no such thing was done.

We can hardly assume that a man who lived on Beacon Hill in Boston, whose home was a centre of social life, who had studied the classics with a man intimately acquainted with the course of study at Harvard, who had sought vainly in Boston for a person who could teach him German, and vainly for a German dictionary in the Harvard library, who had graduated from a college that professedly imitated Harvard in the administration of its curriculum, who had accepted a professorship at Harvard on November 6, 1817, — it is indeed wholly unreasonable to assume that such a man in the year 1819 was not acquainted with the régime of prescribed studies at Cambridge; and yet he says that, after his return from Göttingen in that year, he “had no misgivings about the wisdom of the organization and management” of Harvard College, that, on the contrary, he adopted “the established order of things . . . very cheerfully.”

Where, then, shall we turn for the immediate incentives of George Ticknor in urging the destruction of the methods of teaching by classes and prescribed subjects, that had been

fixing their roots in Cambridge soil for nearly three centuries? It is but natural to look to the Sage of Monticello. As a matter of fact, George Ticknor, in the year 1815, just before his departure for Europe, spent hours at Monticello, at a time when the university project was dearest to Jefferson's heart. In a letter, February 7, 1815, George Ticknor wrote to his father :

We left Charlottesville on Saturday morning, the 4th of February, for Mr. Jefferson's. . . .

On Sunday morning, after breakfast, Mr. Jefferson asked me into his library, and there I spent the forenoon of that day as I had that of yesterday. . . .

On Monday morning I spent a couple of hours with him in his study. . . .

To-day, Tuesday, we told Mr. Jefferson that we should leave Monticello in the afternoon. He seemed much surprised, and said as much as politeness would permit on the badness of the roads and the prospect of bad weather, to induce us to remain longer. It was evident, I thought, that they had calculated on our staying a week. At dinner, Mr. Jefferson again urged us to stay, not in an oppressive way, but with kind politeness ; and when the horses were at the door, asked if he should not send them away ; but, as he found us resolved on going, he bade us farewell in the heartiest style of Southern hospitality, after thrice reminding me that I must write to him for letters to his friends in Europe. I came away almost

regretting that the coach returned so soon, and thinking, with General Hamilton, that he was a perfect gentleman in his own house.

The friendship with Jefferson, begun at this impressionable age, had a profound influence on the young scholar. Jefferson, who called Ticknor "the best bibliograph I have met with," sought from the beginning to interest him in the university plans. And this with a definite purpose. In 1817 Jefferson spoke of that purpose in a letter to John Adams: "We shall be ready for a professor of languages in April next, for two others the following year, and a fourth the year after. How happy should we be if we could have a Ticknor for our first. A critical classic is scarcely to be found in the United States. To this professor, a fixed salary of five hundred dollars, with liberal tuition fees from the pupils, will probably give two thousand dollars a year. We are now on the lookout for a professor, meaning to accept of none but of the very first order."<sup>1</sup>

<sup>1</sup> *Writings*, xv, 137. Other references indicating the influence of Jefferson upon Ticknor will be found in Jefferson's *Correspondence*, xiv, 239, 254, 257, 301 ; xv, 207, 454.

In pursuit of this project for making Ticknor the first professor in the new university, Jefferson sent the following letter to Europe:

DEAR SIR: I received, two days ago, your favor of August 10, from Madrid, and sincerely regret that my letter to Cardinal Dugnani did not reach you at Rome. It would have introduced you to a circle worth studying as a variety in the human character. I am happy, however, to learn that your peregrinations through Europe have been successful as to the object to which they were directed. You will come home fraught with great means of promoting the science, and consequently the happiness of your country; the only obstacle to which will be, that your circumstances will not compel you to sacrifice your own ease to the good of others. Many are the places which would court your choice; and none more fervently than the college I have heretofore mentioned to you, now expected to be adopted by the State and liberally endowed under the name of "the University of Virginia." . . . I pass over our professorship of Latin, Greek and Hebrew, and that of modern languages, French, Italian, Spanish, German and Anglo-Saxon, which, although the most lucrative, would be the most laborious, and notice that which you would splendidly fill, of Ideology, Ethics, Belles-Lettres and Fine Arts. I have some belief, too, that our genial climate would be more friendly to your constitution than the rigors of that of Massachusetts; but all this may possibly yield to the *hoc coelum, sub quo natus educatusque essem*. I have indulged in this reverie the more credu-

lously, because you say in your letter that "if there were a department in the central government that was devoted to public instruction, I might have sought a place in it; but there is none, there is none even in my State government." Such an institution of the general government cannot be, until an amendment of the Constitution, and for that, and the necessary laws and measures of execution, long years must pass away. In the mean while we consider the institution of our University as supplying its place, and perhaps superseding its necessity.

With stronger wishes than expectations, therefore, I will wait to hear from you, as our buildings will not be ready under a year from this time; and to the affectionate recollections of our family, add assurances of my constant and sincere attachment.

TH. JEFFERSON.

Nearly a year before this letter was written, Ticknor had accepted the offer of Harvard College. Nevertheless, Jefferson persisted. After the agreement with Dr. Cooper had been canceled on sectarian grounds in the fall of 1820, the Visitors of the University of Virginia, following the accustomed leadership of Jefferson, sought to secure Ticknor of Boston and Bowditch of Salem. As compensation, they offered salaries and fees amounting to \$2500, together with apartments. Such liberal offers, considering the standard of living, are rarely made

in our own day. Even at that time, Harvard College had secured Ticknor as Professor of French, Spanish and Belles-lettres at a salary of \$1000, of which Ticknor regularly left \$400 to the use of the struggling institution.

It was while Ticknor was urging certain reforms at Harvard College that he received the pregnant suggestions in that remarkable letter, quoted at the close of the previous chapter, from the one man in all America whose educational opinions he most valued. At that time Ticknor was by no means prepared to advocate a system of completely voluntary elections. In July, 1823, before his visit to Virginia, and probably before his receipt of Jefferson's letter of the previous month, Ticknor felt that the old prescribed system had "in some respects its peculiar advantage. The majority of young men who come to Cambridge," he added, "should not be left entirely to themselves to choose what they will study, because they are not competent to judge what will be most important for them." (*Life, Letters, and Journals*, p. 357.) It will be recalled that the letter from Jefferson declared his unqualified approval of the Elective System, and his dis-

trust of the practices at Harvard. The University of Virginia, he said, was not to hold all students to one prescribed course of study, but, on the contrary, would allow them uncontrolled choice. Considering the critical time of its arrival, the influence of the writer, and the views it emphasizes, this letter deserves distinction in the history of the administration of the American college curriculum.

Although Ticknor did not accept the offered professorship in Virginia, he did accept the invitation of Jefferson to visit the University, and on December 16, 1824, he wrote from Monticello to William H. Prescott:

Yesterday we formed a party, and, with Mr. Jefferson at our head, went to the University. It is a very fine establishment, consisting of ten houses for professors, four eating-houses, a rotunda on the model of the Parthenon, with a magnificent room for a library, and four fine lecture-rooms, with one hundred and eight apartments for students; the whole situated in the midst of two hundred and fifty acres of land, high, healthy, and with noble prospects all around it. It has cost two hundred and fifty thousand dollars, and the thorough finish of every part of it, and the beautiful architecture of the whole, show, I think, that it has not cost too much. Each professor received his house, which in Charlottesville — the neighboring village — would



rent for \$600, a salary of \$1500, and a fee of \$20 from every student who attends his instructions, which are to be lectures, three times a week. Of the details of the system I shall discourse much when I see you. It is more practical than I feared, but not so practical that I feel satisfied of its success. It is, however, an experiment worth trying, to which I earnestly desire the happiest results; and they have, to begin it, a mass of buildings more beautiful than anything architectural in New England, and more appropriate to an university than can be found, perhaps, in the world.

Mr. Jefferson is entirely absorbed in it, and its success would make a *beau finale* indeed to his life. He is now eighty-two years old, very little altered from what he was ten years ago, very active, lively and happy, riding from ten to fifteen miles every day, and talking without the least restraint, very pleasantly, upon all subjects.

Here we find Ticknor, over six months before the publication of his *Remarks*, saying to one of the men who later urged the writing and publication of that pamphlet: "Of the details of the system [at the University of Virginia] I shall discourse much when I see you. It is more practical than I feared, but not so practical that I feel satisfied of its success. It is, however, an experiment worth trying."

After his return to Harvard, Ticknor con-

tinued to gather information regarding this experiment worth trying. On the 6th of April, 1825, James Madison wrote to George Ticknor :

Our University has been opened with six or seven professors, and a limited but daily increasing number of students. I shall take a pleasure in complying with your request of such information as may explain its progress. In compiling a code of regulations, the University has had the benefit of that of Harvard, which was kindly transmitted. Of all exchanges, that of useful lights ought to be the freest, as doubling the stock on both sides, without cost on either. Our University is, as you observe, somewhat of an experimental institution. Such, however, is the nature of our federative system, itself not a little experimental, that it not only excites emulation without enmity, but admits local experiments of every sort, which, if failing, are but a partial and temporary evil ; if successful, may become a common and lasting improvement.

It is true that before this second visit to Virginia, Ticknor had urged reforms at Harvard College. A year and a half after he "very cheerfully" took up his work there, accepting "the established order of things," he began to feel the need of reforms. But his remonstrances to the President "ended in nothing." Then, at the request of Prescott, he wrote a

letter that prompted the Corporation to investigate. In reply to the questions concerning proposed changes, the teachers returned answers covering nearly three hundred pages. As a large majority were opposed to any change of importance, the Corporation were unwilling to take action. After the rebellion of May, 1823, in which the academic lives of forty students were suspended or lost, Ticknor presented a paper to certain influential officers of the College. In opposition to the prevailing system, he said :

There are twenty or more teachers, and three hundred students, and yet the division into classes remains exactly the same, and every student is obliged to pass through the hands of nearly or quite every instructor. Of course, the recitations become mere examinations, and it cannot be attempted to give more than the most superficial view of very important subjects, even to those who would gladly investigate them thoroughly, because they must keep with the class to which they are bound, and hurry on from a teacher and a subject to which they have, perhaps, important reasons for being attached, to another teacher and another subject, wherein their present dispositions and final pursuits in life make it impossible for them to feel any interest. But at the same time that we at once perceive this system . . . has been carried too far, . . . we must still feel that it has in some respects

its peculiar advantages. The majority of the young men who come to Cambridge should not be left entirely to themselves to choose what they will study, because they are not competent to judge what will be most important for them; and yet no parent would wish to have his child pursue branches of knowledge which he is sure can never be of use to him in future life.

A beneficial compromise can, however, as it seems to me, be effected between the old system still in operation and the most liberal concessions that would be demanded by one of the free and philosophical universities of Europe.

After two committees of the Overseers had reported in favor of changes, as we shall see presently, "the resident teachers *again* declared themselves against all but very trifling changes." The Overseers, however, having passed unanimously the greater changes proposed by Ticknor, he then explained and defended those views in a pamphlet which is the most important single document in the early history of the Elective System at Harvard College.

In the course of his *Remarks*, he said :

For the most that an instructor now undertakes in our colleges is to ascertain, from day to day, whether the young men who are assembled in his presence have probably studied the lesson prescribed to them. There his duty stops. If the lesson have been learnt, it is

well; if it have not, nothing remains but punishment, after a sufficient number of such offenses shall have been accumulated to demand it; and then it comes, halting after the delinquent, he hardly knows why. The idea of a thorough commentary on the lesson; the idea of making the explanations and illustrations of the teacher of as much consequence as the recitation of the book, or even more, is substantially unknown in this country, except at a few preparatory schools.

The consequence is, that, though many of our colleges may have a valuable apparatus for instruction, though they may be very good, quiet, and secluded places for study, and though many of the young men who resort thither may really learn not a little of what is exacted or expected from them, yet, after all, not one of our colleges is a place for thorough *teaching*; and not one of the better class of them does half of what it might do, by bringing the minds of its instructors to act directly and vigorously on the minds of its pupils, and thus to encourage, enable and compel them to learn what they ought to learn, and what they easily might learn.

The increasing demands of the community may be here met, and our high places for education may easily accommodate themselves more wisely to the spirit and wants of the times in which we live. *And this, if done at all, must be done speedily; for new institutions are springing up, which, in the flexibility of their youth, will easily take the forms that are required of them, while the older establishments, if they suffer themselves to grow harder and harder in their ancient habits and systems, will find, when the period for more important*

alterations is come, and free universities are demanded and called forth, that, instead of being able to place themselves at the head of the coming changes and directing their course, they will only be the first victims of the spirit of improvement.<sup>1</sup>

Apparently the "Remarks" were too progressive for the staid pages of the *North American Review*. After the Editor had invited and accepted the article, — indeed, after it was already in type, — he decided, "by the advice of friends," that it would be "inexpedient" to publish it. It would be interesting to consider whether there ever was an epoch-making proposal in the history of education that was not first rejected as inexpedient, by the advice of friends.

<sup>1</sup> *Life, Letters, and Journals of George Ticknor*, vol. i, pp. 362-364. The italics are not Ticknor's : the change is here made to call attention to the evident reference to the University of Virginia.

## CHAPTER V

### CONTEMPORARY REFORMS AT OTHER COLLEGES

“THIS is emphatically an age of improvement, especially in the science of education.” With these words the Faculty of Amherst College introduced to the Trustees, in 1826, a noteworthy report “upon the great and popular question of college reform.” During this decade, 1820–30, the movements for the reconstruction and more efficient administration of the college curriculum were by no means confined to Charlottesville and Cambridge. Indeed, this period in the history of higher education may be called the American Renaissance. Especially in the years 1825 and 1826, the history of the Elective System was fast in the making.

It was in 1825, when the University of Virginia put into operation the first extensive Elective System in a chartered American college, and when George Ticknor published his revolutionary *Remarks*, that Henry W. Long-

fellow, who was to carry the reforms forward as Ticknor's successor in the Smith professorship, completed the rigidly prescribed course at Bowdoin College. It was in June of this year that the efforts of William Prescott and Judge Story carried Ticknor's Jeffersonian ideas to favorable votes in the meetings of the Harvard Corporation and Overseers.

It was in 1826 that the *American Journal of Education* was established in Boston, and presented in its very first volume certain extracts from Professor Jardine's *Outlines of Philosophical Education* that called for reforms in the prevailing systems of collegiate education. He does not marvel at the fact that the character of the age in which an institution is founded is deeply impressed upon it, but he holds it a reasonable expectation that, in proportion as knowledge advances, and the objects of business or ambition assume a new form, the system of instruction should undergo a corresponding change. "Such, however, is not found to be the case. On the contrary, in some establishments of this kind, possessing great wealth and antiquity, the statutes of the founder, or the example of



former generations, continue to exert a much more powerful influence on the practice of teachers than any considerations which might be deduced from the extension of science, or even the wants and probable destination of their pupils. But I humbly conceive, that if Classical Knowledge be not ample, it is in a great measure useless ; and that no time is less profitably spent than that which is passed in acquiring a mere smattering of the ancient languages." This looks toward a more liberal curriculum. It is distinctly modern doctrine. In fact, it is a more advanced conception of the aims of education than several of the addresses at the annual meeting of the New England Association of Colleges and Preparatory Schools, A. D. 1909.

In this same initial volume of the *American Journal of Education* (July, 1826) there were published certain extracts from a "Lecture on Education" by Captain Partridge, indicating that he already had in operation, though not in a chartered college, some of the plans that we have associated with the names of Jefferson and Ticknor. Captain Partridge discussed six defects of the education of the day. After de-

claring that it is not sufficiently practical, nor adapted to the needs of American citizens, that it utterly neglects physical education, that it allows students too much idle time and too much spending money, he sets forth the following defects in the administration of studies :

A fifth defect is the requiring all the students to pursue the same course of studies.

All youth have not the same inclinations, nor the same capacities ; one may possess a particular inclination and capacity for the study of the classics, but little or none for the mathematics and other branches of science ; with another it may be the reverse. Now it will be in vain to attempt making a mathematician of the former, or a linguist of the latter. Consequently, all the time that is devoted in this manner will be lost, or something worse than lost. Every youth, who has any capacity or inclination for the acquirement of knowledge, will have some favorite studies, in which he will be likely to excel. It is certainly then much better that he should be permitted to pursue those, than that, by being forced to attend to others for which he has an aversion, and in which he will never excel, or ever make common proficiency, he should finally acquire a dislike to all study.

A sixth defect is the prescribing the length of time for completing, as it is termed, a course of education. By these means, the good scholar is placed nearly on a

level with the sluggard ; for whatever may be his exertions, he can gain nothing in respect to time, and the latter has, in consequence of this, less stimulus for exertion.

In a Prospectus of 1820, announcing the opening of the American Literary, Scientific and Military Academy, this same Captain Partridge begged "leave respectfully to inform the American public," that this proposed institution at Northfield, Vermont, offered the following courses of instruction :<sup>1</sup>

Latin, Greek, Hebrew, French, English, Arithmetic, Logarithm, Algebra, Geometry, Plane and Spherical Trigonometry, Planometry, Stereometry, Mensuration by Trigonometry and also Geometrically, practical geometry generally, Surveying, Leveling, Conic Sections, use of the Barometer, Mechanics, Hydrostatics, Hydraulics, Chemistry, Electricity, Optics, Astronomy, Navigation, Geography, Composition, Logic, History, Ethics, Natural and Political Law, Laws of Nations, Military Law, Constitution of the United States and of the states severally, Metaphysics, Agriculture, Permanent and Field Fortifications, Field Engineering generally, Construction of Marine Batteries, Artillery duty, Principles of Gunnery, Attack and Defense, Military Tactics, Castramentation, Ancient Fortification, Ancient Tactics, Book-keeping, Music, Fencing, Military Drawing, Topography, Civil Engineering, Architecture.

<sup>1</sup> Ellis, *Norwich University*, p. 478.

Evidently a new star had appeared in the firmament of American colleges, and its light was to shine on all men.

That this new institution, which was open to students six years before the University of Virginia, and which illustrates the influence academies were beginning to exert on colleges, had administered its extensive curriculum under an Elective System, was made clear by the founder in his "Lecture on Education."

Captain Partridge's school was opened in the fall of 1820 at Northfield, Vermont, with one hundred students. From 1825 to 1828, it was continued at Middletown, Connecticut. During this period nearly twelve hundred students enrolled, of which there were over one hundred from South Carolina alone. The great and immediate popularity of the institution is sufficient proof that its scientific and military studies, its attention to physical education, its unfixed term of residence, and perhaps, above all, its Elective System, met a demand that existing colleges had utterly failed to satisfy. Yet Yale and Trinity appear to have prevented Captain Partridge from securing a Connecticut charter and the privilege of grant-

ing degrees. He accordingly returned to Northfield, where meantime he had been using his old building as a preparatory school; and in 1834 he had the institution chartered by the State of Vermont as Norwich University.

At this time the prospectus declared that:

Ancient and Modern Languages are taught to all who may wish to pursue them; and those who attend to one or all of them, will, in addition to his diploma, be entitled to a certificate signed by the president and vice-president, stating the progress made in such languages.

Each student is permitted to advance as rapidly as possible in his studies, . . . and whenever he has completed a course, is entitled to an examination, and the honors of the University, if found qualified for the same.

The Modern Languages, Music and Fencing, will be taught to those students, who may wish to attend to any or all of them; for each of which they will be charged four dollars per quarter.

It is thought that a period of from three to five years will, in general, be necessary.

The educational awakening in the South, the beginnings of which we have traced in an earlier chapter, appears to have reached even to the northernmost college in the United States during the notable year of 1825. The men who took their degrees at Bowdoin Col-

lege that year have been called the most distinguished class that ever graduated from an American institution. Among its members were Hawthorne and Longfellow. Whether it was the inspiration of a class like this, or the spirit of the era, that called for an enriched course of study, certain it is that the manuscript records of the Trustees of Bowdoin College contain the following entries :

Sept. 7th, 1825. . . . Voted. That a committee of the Trustees and Overseers be appointed to take into consideration the whole subject and course of instruction, and to report at the next annual meeting a list of books to be studied and a system of instruction to be pursued in this institution.

Voted. That a professorship be established for the instruction of the Junior and Senior classes in the modern languages of Europe, particularly French and Spanish.<sup>1</sup>

This is the first evidence of any consideration by the Bowdoin authorities of the curriculum as a whole. Although detailed records of the Boards are preserved from the year 1794, the course of study seems to have grown up piecemeal in blind allegiance to Harvard and

<sup>1</sup> Archives of Bowdoin College. Manuscript Records of the Board of Trustees, vol. i, September 7, 1825.

its English traditions. A president was elected in 1801, at a salary of one thousand dollars. A professor was elected a few months later with promise of five hundred dollars, whereupon he delivered an inaugural address in Latin and proceeded to teach the whole college. It was not until 1805 that a professor of Mathematics and Natural Philosophy was secured. Whenever a few hundred dollars of new funds vouchsafed the services of another tutor, additional instruction was offered; but up to the Renaissance of the third decade, the young college on the frontiers of Massachusetts had hardly caught up with the traditional curriculum. Its Trustees and Overseers record their serious deliberations concerning Charles Coffin's bill of one dollar, sixty-two and one-half cents, Ebenezer Crosby's allowance of one dollar and a half for services as constable at Commencement, the painting of the president's house, the deepening of the college well, the fine of fifty cents for each neglect of a theme or forensic disputation; but not until 1825 did they decide to take up, in a thorough-going manner, the whole question of the curriculum.

It is easy to trace in the Records of the Overseers the steps that were leading to this action of 1825. In 1820 French had been received on suspicion, and allowed at Bowdoin its usual place outside the college gates. Students might embrace the subject only on penalty of an extra fee of five dollars. The next year two hundred dollars was appropriated for religious instruction, and it was "Voted, that in addition to their other studies now required by law the Junior class shall be required to study the Acts, Epistles and Revelations in Griesbach's Greek Testament, and the same shall hereafter constitute a portion of their theological collegiate course; that candidates for admission into college, who are not prepared to pass an examination in the Acts, Epistles and Revelations may in lieu thereof be admitted to an examination in Xenophon's *Cyropædia* at the election of the persons offering such candidates for admission."<sup>1</sup> It is interesting to note, in passing, that this, the first clear case of "election," actually appears in the entrance requirements. In 1823 came a Professor of Logic, Metaphysics and Ethics.

<sup>1</sup> Records of the Trustees, August 21 and 22, 1822.



The following year the Trustees voted that "the Professor of Rhetoric and Oratory . . . is also permitted to deliver occasional lectures on the subject of civil polity and political economy," and "that it be also incumbent on the Professor of Metaphysics and Moral Philosophy, to prepare and deliver a course of Lectures on Biblical Literature as soon as convenient."<sup>1</sup> Evidently the course of study was making its usual approach to a demand for thorough revision. Not only was there need of a new apportionment of studies in the fall of 1825, when the committee of revision was appointed, but there was need of considering at Bowdoin the animating principle of the American Renaissance. Apparently the stage-coaches had brought to Brunswick the Reports of the Harvard Overseers and Ticknor's *Remarks* of 1825, if not the later Reports of the Amherst Faculty; for not only did Bowdoin College provide in 1827 for an "optional" course in Hebrew, but in the same year the Visiting Committee raised the questions: "Whether the study of one or more of

<sup>1</sup> Records of the Trustees, August 31 and September 1, 1824.

the modern languages of Europe ought not to be made a prominent part of the regular course of education in this institution," and "Whether the course of instruction ought not to be more of a practical and less of a scholastic character and to this end whether the study of the Greek Language in this College ought not to be optional with the student."<sup>1</sup>

Apparently the Faculty had not taken kindly to the innovations, for in 1828 the Visiting Committee reported that,

In turning our attention to the "course of instruction pursued" we find that the provision of Law No. 22, which unequivocally requires that the course of study shall comprehend *Modern Languages*, has not been carried into effect. . . . In September, 1825, the Trustees and Overseers established a Professorship of Modern Languages, and by the same vote authorized the Executive Government to expend a sum not exceeding five hundred dollars, annually in procuring instruction in the French language until a Professor shall be elected. . . . No instruction in the French language for the past year has been provided and no such Professor has been elected.<sup>2</sup>

<sup>1</sup> Archives of Bowdoin College, Manuscript Reports of Visiting Committees, 1826-33, p. 30.

<sup>2</sup> Archives of Bowdoin College, Manuscript Report of Visiting Committee, September 2, 1828.

In 1829 the Visiting Committee changed their tentative suggestion to a declaration in favor of elective studies :

It has been suggested that the system of instruction may be so modified as to allow the students within a limited range a choice of studies. If this principle is introduced the liberty of choice ought to be confined to certain prescribed courses. It has been proposed to allow an option between prosecuting the study of Greek and that of one or more of the modern languages. Another obvious cause for option would be between the higher branches of pure mathematics and a course of the moral sciences and philology. That invaluable advantages would arise from allowing this option we think is too clear to admit of question.<sup>1</sup>

While the first Professor of Modern Languages at Harvard was proving the worth of the Elective System, by the highly successful administration of his own department, the man who was to succeed him in the Smith Professorship began to infuse new life into Bowdoin College. In September, 1828, Henry Wadsworth Longfellow was elected Instructor in the French, Spanish, Italian and German languages at a salary of six hundred dollars.

<sup>1</sup> Archives of Bowdoin College, Manuscript Reports of Visiting Committee, 1826-33, pp. 76-77.

The next year the Boards rescinded their vote of 1825 restricting the instruction in Modern Languages to Senior and Junior years. Longfellow's courses were opened even to Freshmen. The very year after he took up his work, the Bowdoin catalogue announced the first real electives. "Instead of the Ancient Languages and the Calculus, the student may at his option study the Spanish and Italian languages." Thus at Bowdoin, as at Harvard, it was the modern languages that forced the first concessions to the elective principle, and at the expense of those tyrants of old, — Latin, Greek and Mathematics.

It was in the summer of the same eventful year of 1826, that the Faculty of Amherst College presented to the governing boards an inspired report on "the state of that Seminary." That it was wholly inspired by Jefferson and Ticknor, it would be impossible to prove; for in several important respects — notably in its far-sighted provisions for the training of teachers — it was in advance of even the Virginia and Harvard reformers. The following quotations from the "Report of the Amherst Faculty" show how clearly

they diagnosed the ills of the American College:

One fact, we take it, is becoming more and more obvious every day. The American public is not satisfied with the present course of education in our higher seminaries. And the great objection is, that it is not sufficiently modern and comprehensive, to meet the exigencies of the age and country in which we live. Not that the general voice seems to be hostile to the Ancient Classics. Any College may, without serious opposition, retain both the Latin and Greek languages for the majority of its sons — may insist more strenuously than heretofore upon the study of the abstruse sciences, and may multiply its requisitions in every existing department, provided it will at the same time open its doors to that large class of young men, who are not destined to either of the learned professions, and carry them through a course, which they think better adapted to their future plans and prospects. The complaint is, and if our ears do not deceive us, it daily waxes louder and louder, that while every thing else is on the advance, our Colleges are stationary; or if not quite stationary, that they are in danger of being left far behind, in the rapid march of improvement.

Why, it is demanded, such reluctance to admit modern improvement and modern literature? Why so little attention to the natural, civil, and political history of our own country and to the genius of our government? Why so little regard to the French and Spanish languages, especially considering the commercial relations which are

now so rapidly forming, and which bid fair to be indefinitely extended between the United States and all the great southern Republics? Why should my son, who is to be a merchant at home, or an agent in some foreign port; or why, if he is to inherit my fortune, and wishes to qualify himself for the duties and standing of a private gentleman, or a scientific farmer — why, in either case, should he be compelled to spend nearly four years out of six, in the study of the dead Languages, for which he has no taste, from which he expects to derive no material advantage, and for which he will in fact have but very little use after his senior examination?

Such questions as these are every day asked by men whose strong good sense, education and standing in society, entitle them to be heard; and it does not satisfy them to be told, even from the halls of science, that a knowledge of the Ancient Classics is in all cases of pre-eminent importance; that no man can speak, or write English correctly, who has not read them; that the present system has the advantage of great age, and the sanction of long experience; that innovations are dangerous; and that, if the young men of this generation profit as much by a liberal education as their fathers did, the public will have no reason to complain.

To such admonitions as these, coming as they do from some of the highest literary authorities in the land, the advocates of reform may lend a civil and patient attention: and the profound veneration of many for old establishments, may half prevail over their better judgment; but the majority will be apt still to contend, that in an age of universal improvement, and in a young, free, and

prosperous country like ours, it is absurd to cling so tenaciously to the prescriptive forms of other centuries ; and to meet every call for instruction in Modern Languages, Literature and Improvements, with the cry of innovation. What, they will ask, are our liberties, and indeed all our civil and religious rights and blessings, but the fruits of innovation ?

But however that large class of enlightened men, of whom we have just been speaking, may differ in regard to the practicability, or expediency of modernizing our Colleges, in one thing they are entirely agreed. These Institutions do not at present, afford all the facilities which they want, for the liberal education of their sons ; and we are convinced, that if the Colleges cannot so modify their systems, as to meet the public demand, or if they do not choose to do it, other seminaries, equal in rank and of surpassing popularity, will spring up by their side. How detrimental this would be, to the prosperity of existing establishments, especially such of them as derive their support chiefly from tuition, we need not stop to inquire. Let our Colleges promptly lead on in the mighty march of improvement, and all will be well ; but let them hesitate and linger a little longer, and many of their most efficient friends will go on without them.

That there are serious difficulties in the way of such changes and modifications as are called for, is certain ; but we hope and believe, that they will not be found insuperable. Would it not, for example, be practicable to connect a new and liberal course, with that which is now pursued, under the direction of a common Faculty, and for the most part, under the same teachers, so as not

very materially to increase the expense, while both courses would derive some important advantages from the union? We have nothing matured on this subject, to submit to your consideration; but it does appear to us, that something like this is practicable, and would be of great public advantage. The amount of study required in each course might be the same; it might be left optional with candidates for admission which to take; and they might all graduate together. More instruction, indeed, would be required in two courses than in one; but would not the number of students be sufficiently increased to defray the greater part of the additional expense?

But whatever may be thought of these suggestions, there is one new department of great practical importance, which it appears to us, should be annexed to the College, as soon as funds will any how permit—we mean the *Science of Education*. When it is considered how this lies at the very foundation of all improvement; and when so many Professorships have been established in all the other sciences, as well as in literature and the arts, it is truly wonderful to us, that so little attention has been bestowed upon the science of mental culture, and that there is not (as we believe there is not), and never has been, a single Professor of Education, on this side of the Atlantic. Will it not be an honor to that College, which shall be the first to supply this deficiency, and open a department for the thorough education of teachers? But we have no room for detail, or enlargement in the present Report, and can only add in conclusion, that should the Board judge it expedient, to refer



the several topics which it embraces to a select committee, we fondly indulge the persuasion, that much good might result from the reference.

The Second Report of the Amherst Faculty, presented December 6, 1826, added the following detailed plan :

Our decided and unanimous judgment is, that if a new course is introduced, it ought to proceed on a most liberal scale. By whatever name it may be called, it should be fully equivalent to the course which we now pursue. It should fill up as many years — should be carried on by as able instructors — should take as wide and elevated a range — should require as great an amount of hard study, or mental discipline, and should be rewarded by the same academic honors.

In the department of Languages, an entire separation is proposed, by substituting the modern for the ancient, provided however, that in the new course, Latin may be taken instead of Spanish, at the option of the student when he enters College. Thus, with the knowledge of Greek and Latin, which all who enter will be required to bring along with them, it is thought they may in four years, so far master the French and Spanish, as to read and write, and even speak them with considerable readiness and fluency. Should room hereafter be found for German, or Italian, or both, so much the better ; but we deem it inexpedient to begin upon so broad a scale. The adoption of our general plan, will make the two courses more distinct in the department now un-

der consideration, than in any other. But the new course will differ from the old in several important respects, which are yet to be mentioned ; as

*First.* In the prominence which will be given to English Literature, than which no subject has higher claims upon the American scholar, or can more richly reward his diligence. We do not mean to attach any blame to the Colleges, for having done comparatively so little hitherto, in this department, for who can teach every thing in four years ? But we believe the time has come, for the more critical study of some of the admired classics in our own language, by a portion at least, of the liberally educated in every College.

*Second.* The new course will differ essentially from the old, in the attention which will be given to French and Spanish Literature, by connecting this branch of study with the recitations and other exercises in these two rich and popular languages.

*Third.* In Mechanical Philosophy, by introducing some such text book as, *Nicholson's Operative Mechanic and Machinist* ; and by multiplying and varying the experiments, so as to render the science more familiar and attractive.

*Fourth.* In Chemistry and other kindred branches of Physical Science, by showing their application to the more useful arts and trades, to the cultivation of the soil and to domestic economy.

*Fifth.* In a course of familiar Lectures upon curious and labor saving machines ; — upon bridges, locks and aqueducts ; and upon the different orders of architecture, with models for illustration.

*Sixth.* In Natural History, by devoting more time to those branches which are now taught, and by introducing others into the course.

*Seventh.* In modern History, especially the history of the Puritans, in connection with the Civil and Ecclesiastical history of our own country.

*Eighth.* In the elements of Civil and Political law, embracing the careful study of American Constitutions. To which may be added Drawing and Civil Engineering, together with some other branches perhaps, which are not specified in the foregoing enumeration. Ancient History, Geography, Grammar, Rhetoric and Oratory, Mathematics, Natural, Intellectual and Moral Philosophy, Anatomy, Political Economy and Theology, will, upon the plan here recommended, be common to both courses.

The Board will recollect, that in our first Report, we ventured to express a decided judgment, in favor of *a new* department for systematic instruction in the science of education; and all our subsequent thoughts on the subject have conspired to strengthen the opinion which we then entertained. Indeed, we look at this chasm, in the most complete and popular systems of an enlightened age, with increasing wonder. Why has it been suffered so long to remain, or rather why to exist at all in our public seminaries? No respectable College would think itself organized, without a department of Natural Philosophy, and another of Chemistry — nor without Professors in Rhetoric and the Languages; and yet, how few who enjoy these advantages in College, expect ever to be practical Chemists, or Philosophers, or Critics.

How then can the most distinguished and useful literary institutions in the land go on from year to year without a single instructor devoted to the science of education, when three fourths of their sons expect to be teachers, in one form or another themselves, and when the primary schools, academies, and higher institutions of learning, require twice, or thrice as many thousands to supply them, as are wanted for all the learned professions together? Every third or fourth man we meet, is, or has been a school-master; but who among a thousand of the best qualified, was ever regularly instructed himself in the science and art of teaching, for a single quarter? And to rise still higher, who that daily gives lectures, or hears recitations in College, does not find reason to regret, that when he was a student, the analysis of mind was so little known or thought of, with reference to the science of education? Who, in short, is so old, or so wise, that he would not gladly take his place as a learner, under a competent Professor of this noble, but strangely neglected science?

We feel confident that the time has come to supply this great desideratum. The public is not only prepared for it, but loudly demands it, and will, we are perfectly assured, rejoice to see the Trustees of this College, acting definitively on the subject. Nor, if we judge correctly, will an enlightened community be satisfied with any but the most comprehensive and liberal views, in the establishment of this new department. To occupy the whole ground, will require,

1. Much time and talent in the selection, revision and compilation of elementary school-books.

2. An experimental school, consisting of young children, under the entire control of the department, where students may have opportunity to learn the art of teaching from example, and in which new methods of instruction may be tried, and the results carefully recorded.

3. Adequate provision for the systematic instruction of school-masters, in all the branches of education, which they may have occasion to teach in our primary or district schools, together with the theory of teaching and government.

4. An able and connected review, or rather series of reviews, of all the popular systems of education now in use, particularly in our own country, with free and critical remarks upon College text-books.

5. A course of lectures annually by the professor, on the science of education, for the particular benefit of the regular members of College, but which other young men, wishing to qualify themselves for teaching, might be permitted to attend.

Less than this ought not to satisfy public expectation from the department, when time shall have been allowed, and means provided for its complete organization.

How far greater would have been the service of Amherst College to the Commonwealth and to the country, if the authorities that succeeded this enlightened Faculty had adopted their statement as a part of the Amherst creed. The College which in 1826 was urged by its

own Faculty to welcome the honor of being the first in America to establish a Chair in Education reached the year 1910 with no such department in its curriculum.

One of the recommendations, however, was adopted by the Board of Trustees and at once put into effect. In the year 1827, accordingly, we have the first clearly conceived division of the college curriculum into a Classical Course and a Scientific Course. (Appendix I.)

In 1825, while the first class to enter the University of Virginia were enjoying wide liberty of choice, Amherst students were permitted a single option, — "Recitations in Hebrew twice a week, if desired."<sup>1</sup> In 1826, Amherst offered to its Seniors one real "elective," — Hebrew or Greek. The next year came the promising Science Course. But, alas, it takes not only a soul to move a body, and a high-souled man to move the masses even to what they most need, — not only inspiration, but funds as well, and funds were not at hand for

<sup>1</sup> The original curriculum for the University of Georgia, Nov. 27, 1800, provides that "if either of the tutors should be acquainted with the French language, that may be taught in addition or instead of the Latin and Greek, as Parents and Guardians may choose." (Manuscript records.)

the wise purposes of the little college in Western Massachusetts. Her prophets were as men crying in the wilderness, the wilderness of classical culture, in whose ancient depths, bearded with moss and echoing with voices sad and prophetic, the light of common day seldom fell and the needs of common man dwelt in darkness. The success of their mission was too much to expect. Human nature seems to have decreed that the history of education shall be one long record of clear conceptions of needs a generation in advance of their realization. And thus at Amherst, in 1830, all that was left of their high hopes was a single option in the second term of Senior year, — Hebrew or Fluxions. (Appendix I.) From the catalogue, in 1834, even that single elective had disappeared. Thus perished in the west of Massachusetts the hopes that were already blighted in the east. They were to rise again only with the rise of a new generation.

## CHAPTER VI

### THE EVOLUTION OF THE ELECTIVE SYSTEM AT HARVARD COLLEGE

THE history of the Elective System at Harvard College may well begin and end, not with the doings of conservative Cambridge, dominated by the academic ideals of the old world, but with that letter of Thomas Jefferson written, June 16, 1823, to Professor George Ticknor of Harvard College. Our account of the development at Harvard may well begin here, for, as we have seen, it was George Ticknor who stood alone in the Harvard Faculty for the elective principle against the opposition of his colleagues; it was George Ticknor who established the system in his own department with a success that made certain its ultimate adoption for all departments; and it was this pioneer of the New Education in New England who resigned his position only when it seemed hopeless for him to strive longer for



the extension of the principle at Cambridge. And the principle for which he there strove a half century ahead of his time came to him primarily — if the evidence we have presented is rightly interpreted — from Thomas Jefferson and the University of Virginia. Our account of the Elective System at Harvard College might well end with a reference to this same letter of 1823, for in it Thomas Jefferson stated with admirable clearness the principle of freedom of choice which Harvard College accepted in its entirety only after three-quarters of a century more of painful progress.

It was in acknowledging the receipt of Professor Ticknor's Syllabus of Lectures on Spanish Literature that Jefferson, as we have seen, commended the principle of uncontrolled choice:

I am not fully informed of the practices at Harvard, but there is one from which we shall certainly vary, although it has been copied, I believe, by nearly every college and academy in the United States. That is, the holding the students all to one prescribed course of reading, and disallowing exclusive application to those branches only which are to qualify them for the particular vocations to which they are destined. We shall,

on the contrary, allow them uncontrolled choice in the lectures they shall choose to attend, and require elementary qualification only and sufficient age. Our institution will proceed on the principle of doing all the good it can, without consulting its own pride or ambition; of letting every one come and listen to whatever he thinks may improve the condition of his mind.

Between the writing of this letter in '1823 and the opening of the University of Virginia with a complete Elective System on March 7, 1825, there had been appointed at Cambridge two successive committees of the Board of Overseers to inquire into the condition of the University. Both of these committees had reported and the Overseers had accepted, January 25, 1825, the report drawn up by the first of these committees, of which Joseph Story was chairman. This report recommended several important changes. Among them were the following: "that the College studies shall be divided into two classes; the first embracing all such studies as shall be indispensable to obtain a degree; the second, such in respect to which the students may, to a limited extent, exercise a choice which they will pursue."

In June, 1825, three months after the opening of the University of Virginia to students,

a new code of laws was adopted by the Harvard Corporation and Overseers. It provided for the admission of what came to be known as "special students" — persons not candidates for degrees; for the divisions of courses into departments with a professor at the head of each department; for the division of classes according to proficiency; and for the consideration, to a limited extent, of the desires of students in the arrangement of their studies.<sup>1</sup> These provisions of Judge Story's report, containing as they do the germs of the Elective System, are the first official statement of a plan for which Harvard University, nearly a half-century later, began to assume an acknowledged, though often a distrusted, leadership. These changes were adopted by the Corporation and Overseers contrary to the recommendations of the Faculty. As might be expected, the immediate result was slight. The opportunity was provided, however, for George Ticknor to carry out in a single department, the French and Spanish Languages and Literature, that voluntary system with which, as

<sup>1</sup> Statutes and Laws of the University at Cambridge, 1826 : 11, 58, 60, 61, 63.

we have seen, he had become so strongly impressed at the University of Virginia.

In 1824 all studies were required, except that Juniors were permitted to choose a substitute for the thirty-eight lessons in Hebrew, and Seniors could choose between chemistry and fluxions. French and Spanish were regarded merely as "extra" subjects, which students might take or not, as they pleased. In 1826, under the new Statutes, students could take modern languages after the first third of Freshman year in place of specified courses in Greek, Latin, Topography, Hebrew and natural science, and Seniors might substitute natural philosophy for a part of intellectual philosophy. As modern languages were almost the only subjects available for election, the freedom of choice was less than it appeared to be.<sup>1</sup>

<sup>1</sup> President Thwing probably wishes to be understood only in a relative sense when he says that "under the influence of George Ticknor . . . a large latitude of choice was allowed students." — *History of Higher Education in America*, p. 316. The Annual Report of the President of Harvard University to the Overseers on the state of the University, 1825-26, gives the schedule, offering Modern Languages or Mathematics, and "Hebrew or substitute" to Junior Sophisters. A footnote says that "the substitute is Latin and Greek,

The immediate result of the adoption of the voluntary plan in Ticknor's department is stated in his letter to the Corporation, April, 1827 :

The object of the law was in part, if I rightly understand it, to lead to instruction by *subjects* rather than by *books*, so that, for instance, a student should not merely read Livy and Horace, but learn Latin. This has been attempted in the modern languages, and I believe the effect has been valuable, though undoubtedly less so than if the same system had been pursued and an attempt made to execute the law in other studies.

In the modern languages, especially, the operation of the principle of choice was decisive. The right to choose was presented, it appears, in two hundred and forty instances, and was accepted in two hundred and twenty-seven. That it has been beneficial in this branch I have had full proof, in the alacrity and earnestness with which a very large proportion of those who have been permitted to choose have pursued the studies they have chosen.

In President Quincy's Report for 1830-31, he said : "an enlarged sphere of action has been Modern Foreign Languages, *or* Mathematics." Senior Sophisters have Intellectual Philosophy *or* Natural History, and Ancient *or* Modern Languages as a substitute for Chemistry, Mineralogy and Geology.

Brown University at this time offered its Juniors, in the Third Term, Calculus *or* French, and its Seniors, in the Third Term, Hebrew *or* French. There were no other options.

opened for the encouragement of the spirit of voluntary study ; not only by the facilities and inducements held out for the pursuit of the modern languages, beyond what the general laws of the University require, but also, recently, by the establishment of a philological department, for teaching the theory and practice of instruction. . . . The institution can be considered at present in the light only of an experiment." President Quincy's later reports make no mention of this subject.

In 1833 Professor Ticknor said : " The system of volunteer study was begun in this department in 1826 with thirteen students. The number of students embracing it has constantly increased every year ; and now exceeds the number of regular students. The teachers are particularly gratified with the proficiency of these volunteer students." In that year the classes in modern languages numbered 210 students, of whom 103 were volunteer students. In his report for 1833-34, Professor Ticknor added that, " owing to the adoption and full application of the volunteer system, the amount of study and progress in each modern language has been greatly increased ;

in some sections doubled within the last eight years."

In 1834 the Faculty adopted regulations for voluntary studies, which established a minimum in mathematics, Greek, Latin, modern languages, theology, moral and intellectual philosophy, logic and rhetoric, level to the capacity of faithful students in the lowest third of a class, and provided that students who had attained the minimum in any branch might elect the studies which they would pursue in place thereof, being formed into sections of not less than six members, without regard to classes.

In spite of these occasional official statements that seemed blessed with an exotic breadth of view, it appears from the meagre offering of elective courses, as well as from the letters of Professor Ticknor, that, except in modern languages, the administration of the college curriculum remained in 1835 substantially what it had been before the adoption of the statutes of 1825.

In 1835, when Ticknor resigned his professorship, he reviewed his fifteen years' work at Harvard in a letter from which the follow-

ing significant passage is taken : " Within the limits of the department I have entirely broken up the division of classes, established fully the principle and practice of progress according to proficiency, and introduced a system of voluntary study, which for several years has embraced from one hundred and forty to one hundred and sixty students, so that we have relied hardly at all on college discipline, as it is called, but almost entirely on the good disposition of the young men and their desire to learn. If, therefore, the department of the modern languages is right, the rest of the college is wrong ; and if the rest of the college is right we ought to adopt its system, which I believe no person whatsoever has thought desirable for the last three or four years." At the same time Professor Ticknor wrote to a friend : " In my own department I have succeeded entirely, but I can get these changes carried no further. As long as I hoped to advance them, I continued attached to the College: when I gave up all hope I determined to resign."

Thus the elective principle was discredited at the beginning of progress by a body of men indoctrinated with the venerable idea of



what constitutes a liberal education. Thus Harvard University spurned an opportunity for consistent and progressive leadership which retarded its growth until a similar opportunity was seized shortly after the Civil War.

In 1838, the Corporation provided that students who had completed the Freshman mathematics might discontinue the subject and take in its place natural history, civil history, chemistry, a course in geography, and the use of the globes, or studies in Greek and Latin additional to the prescribed course. It is suggestive of the early difficulties in providing any real freedom of choice that the college, after announcing this apparent extension of the elective system, felt obliged to add the warning that the College might not be able to provide the proposed alternative of natural history, civil history and chemistry.

In 1838, Professors Beck and Felton proposed "*to require of all* only the classical studies of the Freshman year." "It is probable," they added, "that a liberty of choice will increase the zeal and application of students in the classical departments, and raise materially the standard of scholarship." In

1841, this recommendation was adopted by the Corporation and the Overseers, and the Faculty announced a far broader scheme of studies than any previously permitted at Harvard College. (Appendix II.) It was provided that the students who discontinued Greek and Latin might choose substitutes among the following branches: natural history, civil history, chemistry, geology, geography, popular astronomy, modern languages, modern oriental literature. In defending this extension of the elective system, President Quincy made use of most of the arguments that have since become traditional; but he urged most emphatically the contention that a high standard of scholarship could not be maintained, even in the classics, under the old prescribed system. Theophilus Parsons then presented, for the Overseers, a report in which he set forth clearly those fundamental ideas of the Elective System which were not fully accepted as the guiding principles of the College until Charles William Eliot became President.

That elective studies were still regarded with suspicion by the majority of the Faculty is indicated by the regulation attached to the

new curriculum: "In forming the scale of rank at the end of a term, there shall be deducted from the aggregate marks given for an *elected study* one-half of the maximum marks for each exercise in such elected study." Under the provisions of this tariff, the prescribed studies still remained highly protected, though by no means infant industries.

From Professor Longfellow's annual reports, French appears to have been a required study for three years, 1839 to 1842;<sup>1</sup> but in his annual reports from 1842 to 1848, there regularly appears the statement that "all the modern languages are elective." During this period—one of vigorous growth for the modern languages under the new system—the Faculty voted that no student might study more than one modern language at one time. Professor Longfellow protested against this restriction, and appealed in vain to the Corporation to set aside the vote of the Faculty.<sup>2</sup> This suspicion with which the real interests of the students were regarded, this tyranny of

<sup>1</sup> The statements of the catalogues are at variance with Professor Longfellow's reports, but the latter are unquestionably the better authorities.

<sup>2</sup> College Papers, vol. xiii, p. 13.

vested interests, and the consequent struggle of the modern languages for due recognition, is but the early history of every subject in the college curriculum from Greek itself to the commercial subjects of the new Graduate School of Business Administration.

Between the adoption of the curriculum of 1841 and the accession of President Everett in the spring of 1846, various new regulations were made. These changes are here enumerated because they show the way in which courses of study have been patched up, with rare exceptions, throughout the history of education. The curriculum of the moment is the motley production of numerous transient causes, of pulling and hauling, of tyrannical tradition and personal preference, of accident and compromise, rather than the deliberate and consistent adherence to any fixed principles whatever. Thus, during these five years of vacillation, of fruitless attempts to follow several contradictory policies at one and the same time, the program of 1841 was modified in the following ways:

Chemistry became required in Freshman year instead of elective in Sophomore year.

Geology became elective in Senior year instead of in Sophomore year.

Geography, as an elective, was dropped.

Story's Constitution became required for Juniors instead of for Seniors.

Psychology and ethics became elective instead of required for Juniors.

Political ethics became required instead of elective for Seniors.

Modern languages became elective instead of prescribed for Sophomores and Seniors.

Any one who thus follows the varying fortunes of the numerous subjects of instruction, through almost any series of years in any institution, is perplexed to find any indication of enlightened and authoritative leadership. It seems at times as if an equally good curriculum could have been constructed by chance drawings from a box in which a score or so of subjects had been shuffled.

The new president at once (1846) requested the eighteen members of the Faculty to give their opinions in writing on the advantages and disadvantages of the Elective System. The Faculty was about evenly divided on the

merits of the system, but those who most favored it were the ones who had seen most of its actual working in their own departments.<sup>1</sup> President Everett himself—the companion of Ticknor at Göttingen—was radically opposed to the system. Two committees were appointed, one to prepare a wholly prescribed curriculum, the other to devise a plan of studies that should preserve the Elective System. As might be expected, neither committee could propose an acceptable program. A compromise committee was named to patch up a compromise curriculum.

This curriculum, which probably satisfied nobody, was prescribed for all Harvard students, in its framework, for the next twenty years. It allowed Seniors to elect three of the following studies: Greek, Latin, Mathematics, German, Spanish and Italian. Juniors could elect three from the same list, Italian excepted. All other studies were prescribed.

The election of President Sparks, in 1849, brought into power a new opponent of elective studies. In 1850, the freedom was further

<sup>1</sup> College Papers, vol. xiv. Also *Harvard President's Report*, 1883-84, p. 16.

restricted in that Seniors and Juniors were allowed only *one* elective study, and these electives, as before, included nothing but languages and mathematics. A student might take *one* extra study, but this was a liberty for which no credit was allowed on the rank lists. Protests against this backward step are recorded to the credit of Professors Beck, Longfellow and Pierce.<sup>1</sup>

In the last report of President Sparks (1851-52), he unwittingly made a statement concerning the college curriculum which, as President Eliot says, has remained an unanswerable argument for the Elective System: "The voluntary system, as it has been called, is still retained to a certain extent, rather from necessity than preference. The number and variety of the studies, for which the University has provided instruction, are so large that it is impossible for any student, within the period of four years, to give such a degree of attention to them all as will enable him to acquire more than a limited and superficial knowledge from which little profit can be derived."

<sup>1</sup> *Harvard President's Report*, 1849-50. Also *Records of the College Faculty*, vol. xiii, April 8, 1850.

In 1856, through another curtailment of elective privileges, the system reached its lowest ebb, and here it remained until after the Civil War. (See Appendix III.) The Faculty of 1865-66 (twenty men with 414 students) was no better prepared to provide a broad curriculum than the Faculty of twenty years before. Yet it set out at once upon that policy of decreasing prescribed studies and increasing elective studies which Harvard College followed consistently during the long administration of President Eliot.

The very first words of President Eliot's Inaugural Address, delivered October 19, 1869, enunciate the elective principle as the established policy of Harvard College :

The endless controversies whether language, philosophy, mathematics, or science supplies the best mental training, whether general education should be chiefly literary or chiefly scientific, have no practical lesson for us to-day. This University recognizes no real antagonism between literature and science, and consents to no such narrow alternatives as mathematics or classics, science or metaphysics. . . .

Only a few years ago, all students who graduated at this College passed through one uniform curriculum. Every man studied the same subjects in the same proportions, without regard to his natural bent or preference.



The individual student had no choice of either subjects or teachers. This system is still the prevailing system among American colleges, and finds vigorous defenders. It has the merit of simplicity. So had the school methods of our grandfathers — one primer, one catechism, one rod for all children. . . .

These principles are the justification of the system of elective studies which has been gradually developed in this College during the past forty years. At present the Freshman year is the only one in which there is a fixed course prescribed for all. In the other three years, more than half the time allotted to study is filled with subjects chosen by each student from lists which comprise six studies in the Sophomore year, nine in the Junior year, and eleven in the Senior year. The range of elective studies is large, though there are some striking deficiencies. . . .

The elective system fosters scholarship, because it gives free play to natural preferences and inborn aptitudes, makes possible enthusiasm for a chosen work, relieves the professor and the ardent disciple of the presence of a body of students who are compelled to an unwelcome task, and enlarges instruction by substituting many and various lessons given to small, lively classes, for a few lessons many times repeated to different sections of a numerous class. The College therefore proposes to persevere in its efforts to establish, improve and extend the elective system. Its administrative difficulties, which seem formidable at first, vanish before a brief experience.<sup>1</sup>

<sup>1</sup> C. W. Eliot, *Educational Reform*, chap. i.

The curriculum was no longer at the mercy of chance and compromise: a principle was to guide the administration of studies at Harvard College for the next forty years. In 1872, the Senior year became wholly elective; in 1879, the Junior year; in 1884, the Sophomore year; and in 1894, the single requirement that remained in the entire college course — English A — could be anticipated by an entrance examination. Any one who wishes to follow in detail the development of the system at Harvard College under the enlightened leadership of President Eliot, should read with care his annual reports and those of the Dean of Harvard College. (See Appendix IV.) Abundant materials are there present, all of great value to men of every shade of opinion regarding the merits of the system that President Eliot has so long and so ably defended.

## CHAPTER VII

### THE EVOLUTION OF THE ELECTIVE SYSTEM IN THE SMALL COLLEGE

To recount the vacillations and vicissitudes of the small college curricula of the past century is mainly to trace the influence of radical Harvard and conservative Yale. The small colleges of the United States divide themselves into the Radicals and the Conservatives about as clearly as the political forces of Europe align themselves under the same names. It is true that even the most radical colleges, judged by the standards of extra-academic groups, have been culpably conservative. It is also true that some of the small colleges, pulled this way by the influence of Harvard and that way by the influence of Yale, and subject to the changing personal whims of changing faculties, and the controlling influence now and again of a man with the power of leadership, present in the administration of their studies such a series of dissolving views that only a

rash man would venture to classify them anywhere in particular. Nevertheless, two fairly distinct groups can be corralled, — one responding to the call of Harvard radicalism, the other to the call of Yale conservatism.

Furthermore, the story of each college reveals the recurrent internal conflicts of these two forces. The books of each college registrar recount the fertilizing influence of new ideas and the birth pains of new curricula. Everywhere the old has struggled with the new. Usually the old has held its own by the force of mere numbers. New members of the faculty have had no votes until they have proved themselves docile followers, safe custodians of tradition. No bodies of men, if we except certain dying church societies, have been so bound by tradition as college faculties. "What has been should be," is the nearest approach to a guiding principle that many an institution has conceived. Old professors have selected as their successors men who have succumbed to the system rather than those who have revolted. Thus, on the whole, teachers have always preferred to teach the subjects they were taught, and to teach them in much the same

way. Self-perpetuating corporations and other boards of college government have also helped to stem the tides of the new education by electing to the places of deceased members men of the same generation. When, for example, William DeWitt Hyde, at the age of twenty-six, became President of Bowdoin College, he had to institute reforms, if at all, through a Board of Trustees whose average age was sixty-five years.

No wonder that the courses of study of the small colleges during the past century appear, at this perspective, to have trailed along reluctantly a generation behind the just demands of the multitude they were supposed to serve. "The progress of this institution," said a young professor in a New England college, fresh from university study in Germany, "will be directly proportional to the death-rate of the faculty." It seems a cruel observation, and not wholly warranted, for "young fogysm" is no less deadly than that "old fogysm" that is often unjustly maligned. But on the whole, college records show that each new subject has fought its way, almost literally inch by inch, against the prolonged

opposition of the older professors. Seldom has a program of study been constructed in accord with any accepted educational principles, revealing coherence, consistency, and breadth of view. Rather, each course of study has been patched up for the year, or even for the term, from the vested interests that contrived to hold their own and the new interests that managed to wrest an hour here and there from the conservators of the past.

It would be tedious to follow the fortunes of the liberal offerings of modern electives through all their struggles in the five or six hundred institutions that are still ornamented with the name of college or university. And, happily, it is needless to do so. The development of the Elective System in a single college is typical enough to illustrate the whole movement. And if we choose one of the more conservative of the colleges that grew up under the influence of Harvard, we shall find less divergence from the mean type than in any other example we could select. Such an institution is Bowdoin College.

From the beginnings of instruction at Bowdoin College in 1802 until 1867-68, with the

few exceptions already noted above [p. 98], the curriculum of the traditional type was prescribed for all students. That year three "optional" studies appear on the schedule: Junior Class, Third Term, Plato's *Apology of Socrates*, Spanish Language (Soone's *Neuman and Baretti's Dictionary*, Allendorff's *Grammar*, and *Novelas Españolas*); Senior Class, Second Term, Italian Language. Here we have the characteristic approach to the Elective System, both in the subjects themselves and in their inferior position as "extra studies." Two years earlier, as we have seen, Harvard, with seven elective studies in Junior year and ten in Senior year, had finally launched on her career as the modern champion of the elective principle. The next year at Bowdoin, Plato's "*Phaedo*" took the place of the "*Apology*," and the following year Spanish took the place of Italian. There were no other changes.

The year 1871 brought a new President, General Joshua L. Chamberlain, and with him a new Science Course, offering options in the Sophomore year, and with this course the characteristic apology: "Attention is again directed to the fact that in this aim and effort

nothing is detracted from the high standard of the established College Course. On the contrary, the tendency is to raise this beyond its previous measure. A glimpse is taken of noble fields of labor, and the real business of life. The application, use and value of the abstruse sciences and dry details insisted on in the Classical Course are seen, and the whole form and spirit of study is quickened into new life and meaning."

The adoption of Science Courses in American classical colleges was in the first instance an attempt to stave off the Elective System by giving the new, attractive subjects a place of their own, in the hope that they would no longer dispute the right of eminent domain of the Triumvirate. That this was the case at Bowdoin is clear from the further apology that accompanied the presentation of the first Science Courses.<sup>1</sup>

The demand for what is deemed a more practical Course of Instruction than that afforded by the established College System, has induced the Trustees and Overseers to provide for a Department of Study so constituted and directed as to afford a symmetrical and

<sup>1</sup> For the elaborate curricula that were offered in the upper years of the Science Courses, see Appendix VI.



liberal education, and at the same time to place the student in more immediate relations with the active world and his own work in it. The attempts which have hitherto been made to meet this demand, have resulted in crowding a variety and amount of study into the old College curriculum which is desultory, confusing, and incomplete; or in driving out many studies long tested and approved as the basis of a Classical education or a learned profession. The present plan withdraws these encroaching studies, for the most part, from the Classical Course, and incorporates them into a new one; thus bracing up the classics in their former position — maintaining and confirming the prestige of “Old Bowdoin,” while giving organization and ample scope to the studies which a large class of young men find adapted to their circumstances, talents, or aims in life. The conditions of the case have made it necessary that the requirements for admission to the new Department should be less in some respects than for the Classical; but it will be found that the kind and degree of study required throughout the Scientific Course is the reverse of superficial, and that the two courses, viewed at their completion will be as nearly equal as the different phases and directions of the studies permit.<sup>1</sup>

To give this new and therefore suspected curriculum the “dignity” of the traditional A. B. course, there was actually more Latin prescribed for the science students in Freshman year than for the classical students; and twelve

<sup>1</sup> *Catalogue of Bowdoin College*, 1871, p. 19.

lectures on Greek and its uses in English were provided as an antidote for the "practical" subjects of Junior year. As suggestive of the notion of "equivalents" which governed these early experiments, it is interesting that in 1872, in all branches of the Science department, students were offered a single option in the third term of Sophomore year. They might risk all the baneful effects of the Elective System by choosing either "60 Recitations in Differential and Integral Calculus; or 30 Recitations in Parliamentary Rules and Practice, and 30 Recitations in Logic." Almost any of the options that at this time were vigorously opposed at Bowdoin might have been reasonably defended; but it is difficult to see how Parliamentary Practice could be regarded as the equivalent of Differential and Integral Calculus, or, indeed, how college Sophomores or anybody else could profitably spend thirty recitations on Parliamentary Rules.

It was soon found that such electives as these, attached more or less accidentally to a course that was generally regarded as inferior to the Classical Course, would not satisfy the demands of the time. Since the days of Thomas

Jefferson, the reign of the Oxford Triumvirate had been doomed. Already at Harvard its sceptre had been wrenched with an unlineal hand, no son succeeding. Rebuffed by the victory of the German invaders, it had retreated to its chief strongholds at Williams and at Bowdoin. And now, exactly half a century after the opening of the University of Virginia, the Triumvirate is mortally wounded in the struggle at Bowdoin.

In 1880-81, when the separate Science course was abandoned, the College announced that "instead of separate and distinct courses called classical and scientific, the regular course has been reconstructed, giving more place to scientific studies, and after the second year affording a liberal range of electives within which a student may take such studies as he prefers, to the extent of one quarter of the whole amount pursued. In these electives the Modern Languages have more place than they have hitherto held in the course." In this program of study, the "liberal " electives occupied one-quarter of one-half of the students' work! (See Appendix VII.)

Ten years later, 1890-91, when the Elective

System had won half of the three upper years, the catalogue stated the situation as follows :

The course of study is adapted solely and strictly to students desiring a liberal education. Every student must acquire the discipline of Algebra, Geometry, and Trigonometry, ability to read Latin, Greek, French, and German, and an elementary knowledge of Hygiene, Elocution, Rhetoric, Logic, Physics, Chemistry, Geology, Astronomy, Psychology, Ethics, and Political Economy. The required studies occupy the whole of the Freshman year, and one-half of each of the last three years. The remainder of the curriculum is elective, and includes courses in Botany, Zoölogy, Physiology and Histology, Chemistry, Physics, and Astronomy, on the side of natural science ; and courses in Latin, Greek, French, German and English Literature, Bible Study, History, Sociology, and the Science of Government, on the side of literature and the life of man.<sup>1</sup>

In 1894-95, when all required subjects had been pushed back as far as the first term of Sophomore year, the catalogue said :

The course of study is adapted solely and strictly to students desiring a liberal education. Every student is required to master the elements of Latin, Greek, Mathematics, French, German, and Rhetoric. Having acquired these tools of literary and scientific work, the student is allowed to elect the rest of his studies. The required

<sup>1</sup> *Catalogue of Bowdoin College, 1890-91, p. 23.*

work occupies the whole of the Freshman year and one-third of the Sophomore year. The work of the remaining two-thirds of the Sophomore year and of the whole of the Junior and Senior years is elective. . . .

The scrappy and haphazard study of isolated subjects by single terms, chiefly for the information to be gathered therefrom, has been superseded by a curriculum in which every department offers a general course, consecutive throughout the year; and this general course in every department except Philosophy, which is not introduced until the Senior year is followed by one or more courses, also consecutive throughout a year. . . . The elective studies are so grouped that, while a reasonable degree of concentration is encouraged, excessive and premature specialization is prevented.<sup>1</sup>

To indicate in brief compass how the elective principle edged its way into the curriculum and inch by inch drove the prescribed studies back, and at the same time to show the almost accidental way in which the curriculum evolved, it is necessary only to scan the column of innocent changes that were effected year by year:

<sup>1</sup> *Bowdoin College Catalogue of 1894-95*, p. 27.

ANNUAL PROGRESS OF THE ELECTIVE  
SYSTEM AT BOWDOIN COLLEGE

(For convenient comparison, the dates are given for corresponding steps at Harvard College.)

- 1873. Greek and mathematics become optional in Junior year.
- 1874. Latin gives way to French in the science course.
- 1875. Butler's Analogy gives way to comparative anatomy.
- 1876. Latin and mathematics become elective in the first term of Junior year. Greek becomes optional. (First use of the word "elective.")
- 1877. In Sophomore year, "students elect two of the three studies, Latin, Greek and mathematics."
- 1878. Ancient history is added to Sophomore year; English and United States history are added to Junior year.
- 1879. Military science is added to Senior year.
- 1880. Zoölogy becomes elective in Junior year, Spanish, Italian and Anglo-Saxon are offered as "extras." The classical course and the science course are combined.
- 1881. International law and military science are added to Senior year.
- 1882. International law and military science are dropped from Senior year.
- 1883. Scott's "Development of Constitutional Liberty in the American Colonies" added to electives of Junior year.
- 1884. Sanscrit added to electives of Senior year.

1885. Vertebrate anatomy added to electives of Senior year.
1886. Natural history, now called biology, elective for Juniors.
1887. Elective System extended to Sophomore year, third term. The electives are Latin, Greek, mathematics, physics and English Literature. The first course offered in English Literature is Bacon's Essays and Milton's Areopagitica. Astronomy becomes elective for Seniors.
1888. Bible study becomes elective for Seniors.
1889. French as an elective is pushed back to Sophomore year. There are electives in all three terms. Five subjects are prescribed. (Five years earlier, the last prescribed Sophomore study became elective at Harvard.)
1890. Anthropology and sociology become elective for Seniors. Biology is no longer prescribed.
1891. Bibliography, astronomy, geology, and the history of philosophy become elective.
1892. Rhetoric becomes elective for Juniors.
1893. Contemporary Social Questions becomes elective for Seniors. This year one prescribed subject clings to each term of Senior year: *i. e.* psychology, economics and ethics. Two still cling to each term of Junior year: *i. e.* astronomy and chemistry, logic and chemistry, mineralogy and United States history.
1894. All the prescribed studies disappear from Senior and Junior years. (Fifteen years after the same step at Harvard.)

- 1896. Drawing becomes elective in Freshman year.
- 1898. German becomes elective in Sophomore year for six of the nine groups.
- 1900. Rhetoric becomes elective for those Sophomore candidates for B. S. or B. L. who offer French.
- 1902. The entire Sophomore year (except Themes) becomes elective for all students who offer German or French for admission.
- 1908. By the removal of the requirement of Themes, the Sophomore year becomes elective. (Twenty-four years after the same step at Harvard.)

During the decade 1900-1910, complicated attempts were made, at Bowdoin as at all small colleges, to keep pace with the development of the Elective System in preparatory schools and yet retain some semblance of the prescribed régime. A plan of major and minor requirements was also adopted; but the consideration of this administrative device will be left for the second part of our study, where we shall examine critically the present administration of the college curriculum.



## CHAPTER VIII

### BREAKDOWN OF THE PRESCRIBED RÉGIME

THIS story of the conflict between the radical and conservative forces and the resultant breakdown of the prescribed programs, which we have traced in detail for one of the larger and for one of the smaller colleges, is recorded in the archives of nearly every college. Clear-est of all is the story of the conflict at Harvard and at Yale. During the third decade of the nineteenth century, while Harvard, under the influence of the young and untrammelled University of Virginia, was feeling cautiously for something better suited than the venerable Oxford curriculum to a new democracy in a new world, the university at New Haven fought valiantly for the old régime. Nowhere is the protest against the trend of the past century better expressed than in the reports published in 1828 by a committee of the Yale faculty and a committee of the Yale corporation.

These Yale reports dismiss the whole ques-

tion at issue by declaring that the learned world long ago settled the matter. The one aim of a college is liberal culture, a thorough education by mental discipline. This is utterly impossible without Latin and Greek. "Hardly a question can be named where the practical decision of mankind has been more absolute." If the classics were not required, "this college would probably, at no distant day, sink into a mere academy, while its degrees, being no longer evidence of great literary and scientific attainments, would become valueless. . . . The ancient languages having been made the organ of communicating revealed religion to man, the originals must be considered the standards of accuracy and truth. . . . The single consideration that divine truth was communicated to man in the ancient languages ought to put this question at rest, and give to them perpetuity." The report of the committee of the Corporation concludes by urging "much greater requirements, especially in the classics."

It is interesting to observe how frankly in these days men stressed the social and artificial value of classical knowledge. Harking

back to the barren aims of the Middle Ages, the Yale report declares that "classical learning is interwoven with every literary discussion. . . . High respectability without its aid may indeed be attained, as it has been, by lawyers of extraordinary mental endowments; but such, it is presumed, will generally be found to lament their inability to command the rich illustrations and embellishments, which the scholar copiously draws from classic learning." Although, the committee admits, not all college students will become ministers or lawyers, yet as some men who are to take up these professions may not know it when they enter college, the authorities should safeguard their future rhetorical efforts by prescribing classical embellishments for all students.

Both committees beg the question throughout by assuming that an education with Latin and Greek is "complete," whereas an education without Latin and Greek must be "partial." To give up the classics, they declare, is to give up all "high and solid attainments," to be a college only in name, and to fall into the "fallacy of substituting a diploma for an education." Ticknor's ideas are scorned and

the modern languages are said to require chiefly efforts of memory. As a final argument the classics are said to be the necessary foundation for all other studies, since everything throws light upon everything else. These reports, replete with fallacies as they are, had a strong influence on higher education up to the time of the Civil War. They did much to postpone the day when the reform movements of Jefferson at Virginia and Ticknor at Harvard and the later efforts of Wayland at Brown were to modify every college curriculum in America.

The inaugural address of President Lord of Dartmouth College, delivered the year these reports were published, is one instance of the conservative influence of Yale. Of the Harvard reforms, he is wary. Possibly, he says, institutions that have become venerable by age, powerful in resources and patronage, may go forward to introduce doubtful changes; but feebler institutions cannot leave the ground of general principles. "However, in the zeal of innovation, the utility of classical learning has been decried, it is not probable that the name of scholar will ever be awarded to one who has

not loved to spend his days and nights upon these pages of antiquity, nor drunk deep from these original sources of taste, and genius, and philosophy." So profoundly was he impressed with Yale views that he feared the Harvard reforms, should they prevail, would leave our country to "degenerate into comparative barbarism." Thus has the college curriculum always lagged behind the clear vision of need. Venerable institutions could not, and new ones dared not, lead the way.

That the same paralysis affected American colleges in 1842 appears from President Wayland's virile *Thoughts on the Present Collegiate System*. The system is much the same, he says, throughout the country. "With but very few exceptions it consists of a four years course, terminating in graduation, all the students pursuing the same studies, the same labor being required from all, and the same time being allotted to each. . . . The older institutions have in no important respect even ventured to deviate from it, and the new ones have considered their own organization perfect in just so far as they have been able to approximate to it." Except for such reform

movements as we have recorded, this was a correct summary of the history of the college curriculum in America.

How superficial the prescribed patchwork curriculum became is shown by the catalogue of Union College for 1849. No less than thirty-three subjects are mentioned for juniors and seniors. During the third term of senior year, in the time that could be spared from Hebrew, Biblical literature, moral philosophy and Butler's *Analogy*, students were required to take "botany, geology, mineralogy, anatomy, physiology, with a Synoptical View of the Sciences in Lectures." Lest this Cook's Tour through the realms of human knowledge should seem too restricted, a footnote gives assurance that lectures are also delivered on natural philosophy, rhetoric and oratory, political economy, metaphysics, and the philosophy of history. Maryville College, Tennessee, the first year after the Civil War, prescribed for all students seventy-seven subjects. President Wayland of Brown said that the amount which the college was required to teach had doubled, if not trebled, while the time remained to a day the same as before. When

he told English and Scottish instructors the number of studies required of all students in American colleges, he received the uniform reply, "The thing is impossible." From this impossible thing there seemed to be but one escape, — the Elective System.

In the early seventies the old ideas and the new clashed with the din of real battle. At the inauguration of Noah Porter at Yale, in 1871, President Woolsey declared that "the general tradition of what a college ought to be is tolerably fixed," and he appeared blissfully unaware that the Yale faculties were not then "in the van of the sciences." President Porter, in condemning the Elective System, spoke with a fine sense of superiority of "that millennium which the prophets of the new dispensation declare to have already come in the schools which they have reared." His address implied throughout that the traditional curriculum, so ably defended by the men of 1828, is the only one that can give "habits of systematic research," "culture that is truly liberal," and men who "refine upon our vulgarities and introduce amenities into our social life." At the same time President

Eliot was declaring that the average student, with the help of his instructors, friends, and natural advisers, makes a more judicious selection of studies for himself than the faculty could make for him, with any knowledge which they are likely to have of his tastes, capacities and purposes,—a much better selection, moreover, than the old prescribed curriculum of Harvard College, or the present prescribed curriculums of any other college, would be.

In an historical sketch of St. Louis University written at this time, the orthodox Catholic view of the college course was set forth. The writer attempted to show that the *Ratio Studiorum* of 1599 is as comprehensive in its scope as any true friend of Education could desire :

St. Ignatius comprises in his scheme of studies the entire range of human knowledge, each separate part complete in itself. . . . The foundation is laid by the knowledge of words, their meaning, their forms, and etymology. Words are next marshalled into sentences, which syntax renders correct, precise, perspicuous. Copiousness of diction, as well as elegance, is taught by poetry and rhetoric, whilst the main object of these arts is fully developed in the various kinds of poetical and



oratorical composition. And thus far the various accessory sources of erudition have been kept open to the youthful mind, — history, geography, antiquities, — in addition to the elementary branches of mathematics, all tending to train, to enrich the mind, and to furnish materials for future use. Next comes logic, which teaches the art of reasoning; metaphysics, in its various divisions, — so little esteemed, and yet so worthy of constant study, the science of the mind, the highest and noblest of all sciences purely human. Along with this, the physical sciences and the higher mathematics for the study of which the mind is only then sufficiently developed, claims the students' attention. Thus, the whole sphere of what nature offers to man's knowledge is embraced in the course of philosophy. And all this . . . though magnificent in itself, yet receives its crown and its ultimate perfection from theology, and has its centre there. Theology is the end of all because God is the end of all.<sup>1</sup>

What the college curriculum was in some institutions at this time is suggested by the experience of David Starr Jordan in a well-known college in Illinois. "As Professor of Natural History," he says, "I taught zoölogy, botany, geology, physiology — a little of each and to little purpose. Then physics, chemistry, mineralogy, natural theology, and politi-

<sup>1</sup> Hill, W. H., *Historical Sketch of St. Louis University*, 1879, p. 154.

cal economy, also, as a matter of course. With these went German, Spanish, and evidences of Christianity, because there was no one else to take them. There finally fell on me the literary work of the college—the orations, essays, declamations, and all that flavorless foolishness on which the college depended for a creditable display at Commencement. When to this was added a class in the Sunday-school, you will see why it seemed necessary that the naturalist and the professor must sooner or later part company.”

It was not only the extension of the college curriculum that led to the breakdown of the prescribed program, but as well additional high-school studies which college requirements ignored. The new attitude toward the new high school was first expressed by President Eliot. In 1897, he said:

In view of these changed conditions within the province of secondary education the ultimate principle on which Harvard College tends to act in the matter of admission requirements is this—the College inclines to count for admission any subject which is taught in good secondary schools long enough and well enough to make the study of it a substantial part of a training appropriate to the pupil's capacity and degree of maturity.

The total number of subjects now well taught in secondary schools being much greater than the individual pupil can master, the College tends to accept any selection of subjects—made by school, parents, or pupil—which may fairly be said to constitute a sound training, and is disposed to leave to the secondary school its full share of the responsibility for making wise selections. The future attitude of the College is likely to be not continued insistence upon certain school studies as essential to preparation for College, but insistence that the gate to a university education shall not be closed on the candidate in consequence of his omission at school of any particular studies, provided that his school course has been so composed as to afford him a sound training of some sort. In a democratic nation, spread over a continent, and in which secondary education presents great local diversities, colleges and universities, if they would retain a national character and influence, must be careful not to offer unnecessary obstacles to the admission of young men of adequate though diversified preliminary training. Harvard College has long represented the principle of election of college studies, and has found nothing but advantage in the free application of that principle. It is natural that the College should seek to further the adoption of the same principle in secondary education and in requirements for admission to College.<sup>1</sup>

Up to this point we have described the most critical periods in the history of the college curriculum in America. Before we turn

<sup>1</sup> Harvard College, *President's Report*, 1896-97, pp. 18-19.

to a critical discussion of the present administration of studies, the suggestion may be pardoned that college makers and college critics of to-day might illumine some of the obscure paths in higher education if they would but use the light of history. They might do well to observe how the absolutely essential requirements of one generation are held up to scorn by the next, and in how many respects the educational heresy of the past has become the orthodoxy of the present. Every age has had its ideal curriculum. We now see, or think we see, that for centuries these have all been wrong. No country has ever devised a program for school or college which appears to us to have been perfectly adapted to the needs of all its people. Yet are there not men to-day who, unmindful of the infinite diversity among individuals, the fatal disagreements among themselves, the plain lessons of history, and the evolutionary conception of society, are so presumptuous as fondly to imagine that at last to them, to them alone, have been revealed the studies which we can safely impose—nay, which we must impose—on all our sons and daughters. If we were as

bold as such men, we would prescribe for them a course in history. We would ask them to survey the vestiges of prescribed programs that are now strewn across the continent from Maine to California. Indeed, it might not be without profit if all the modern administrators who have patched up the motley array of programs and the bewildering assortment of rules, to be set forth in the following chapters, would read with care those Yale reports of 1828. It might not be without profit if the faculty of to-day that is about to express its wisdom by prescribing the essentials of a liberal education would note with what certainty the men of 1828—and of every other time, for that matter—settled the whole question and fixed the college curriculum in final perfection.



**PART II**

**CRITICAL**





## CHAPTER IX

### PRESENT REQUIREMENTS FOR THE A. B. DEGREE

THE present age is one of transition in higher education: the American college is on trial. Condemnation is heard on every hand. The capital charge is preferred that there is a general demoralization of college standards, expressing the fact that, as the college serves no particular educational purpose, it is immaterial whether the student takes the thing seriously or not. The college is said to retain traces of its English origin in the familiar twaddle about the college as a sort of gentleman factory — a gentleman being a youth free from the suspicion of thoroughness or definite purpose. The college is charged with failure in pedagogical insight at each of the critical junctures of the boy's education, so that a degree may be won with little or no systematic exertion, and as a result our college students are said to emerge flighty, superficial, and immature, lacking, as a class, concentration, serious-

ness, and thoroughness. Such is the sweeping charge brought forward in "The American College." Nor can the case be laughed out of court, for the prosecution is able to bring forward, from within and without college walls, a formidable body of expert witnesses.

Mr. Charles Francis Adams says that the whole situation stands in crying need of reform. President Wilson observes that so far as the colleges go, the side shows have swallowed up the circus, and we in the main tent do not know what is going on. Professor Cattell cannot understand why the public should pay a thousand dollars for the expenses of each boy who goes through college to enjoy the pleasures of drinking-clubs and betting on athletics. Professor Wendell declares that college education is to-day chiefly notable for its ineffectiveness. President Garfield deplores the weakening of intellectual stamina observed among undergraduates. President Pritchett bears witness that our schools, from the elementary school to the university, are inefficient, superficial, lacking in expert supervision. Others have called the American college "the pedagogical football of university presidents,"

“a club for idling classes,” “a training school for shamming and shirking,” “the most gigantic illusion of the age,” and “a sort of educational vermiform appendix.”

The *Nation*, summing up the testimony of many such witnesses, says that there is only too much concrete evidence to justify the complaint that college students are lacking in spontaneous and disinterested intellectual activity, and there is hardly a college in the country whose bachelor's degree is a genuine certificate of intellectual discipline. The *Dial* declares that modern society has thought to relieve itself of educational responsibility by multiplying the mere machinery of education, until many students nowadays get from their college life little but educational disadvantages. The *Columbia University Quarterly* concludes that the question really is not whether there should be radical changes in the American college, but what the changes should be. Thus there appear to be loud demands for scientific studies of all aspects of college administration. One of the most important of these is the administration of the curriculum.

Regarding the college curriculum of to-day

President Hadley holds that there is something radically wrong about the principles under which we are working. Mr. Flexner says one can lay one's hands on nothing definite in the curriculum that is actually calculated to make for breadth, liberality or citizenship. President W. L. Bryan finds that the excessive expansion of the course of study has cheapened the elementary college work. Professor Stephen Leacock declares that the American student's ignorance of all things except his own part of his own subject has grown colossal. President Schurman deplores the fact that the college is without clear-cut notions of what a liberal education should be, and that this is not a local or special disability, but a paralysis affecting every college of Arts in America. The Glasgow *Herald* declares that in university matters, as in social and political affairs, America does not know where it is going, but it is determined to get there.

This confusion of ideas as to what should constitute the course of study for the Arts degree is revealed in the contradictory charges brought against the American college of to-day. Dean Briggs deplores the fact that many

parents regard college as a place of delightful irresponsibility, where a youth may disport himself before he is condemned to hard labor ; while Dean Birge regrets the sense of elegant leisure and of cultured pleasure, some part of which our colleges have lost. Mr. Birdseye condemns the college for not separating its functions of research and teaching, while Professor Royce warns us against those theorists who want to sunder afresh what the whole course of our modern American development has wisely tended to join, namely, teaching and investigation. President Eliot holds that freedom of choice has proved the only defensible plan for administering the curriculum, while Professor Ladd declares that we must promptly and radically abandon the delusions involved in the Elective System. Some critics condemn the college for keeping its curriculum out of touch with the masses, and thus harboring an indolent aristocracy ; others condemn the college for yielding weakly to the popular cry for more practical courses. Some deplore the desertion of culture courses in favor of courses of vocational trend ; while others call the culture courses nothing but

soft, wishy-washy excuses for sloth, indifference, neglect, and ill-concealed ridicule of the study and its teacher. Some critics hold that the one thing necessary is to secure concentration of each student's work in some department, while others enact complicated rules to enforce the scattering of electives among various departments. And thus it goes. So great is the confusion of current discussions concerning the American college that an old negro preacher seems unwittingly to have summed it up when he said, "Education am de grand palladium ob our liberties and de pandemonium ob our civilization."

One might present an endless confusion of opinions as to what the college course should be; but altogether they would demonstrate finally only one important truth, namely, that nobody knows what the American college course should be. It is needless to tarry long with individual opinions on this subject. The resultants of thousands of such opinions can be seen at a glance in tables showing the present requirements for the degree of Bachelor of Arts in American colleges. Those who have examined many college catalogs can readily

overlook any minor inaccuracies of these tables. Frequently the promise of the catalog is not the performance of the college, and sometimes the language of college publications is obscure or contradictory. Certainly there are no errors of any consequence for the purposes of this study.

Table I indicates the subjects required for the A. B. degree in twenty-nine state universities. The unit used is the year-hour, — one hour per week for one academic year. The most striking fact exhibited by the table is the total want of accepted ideas as to what subjects should be required for the A. B. degree or what proportion of the studies should be prescribed. A mere glance at the table shows the wide diversity of practice which has resulted from these attempts of many groups of men in many states to decide what is the essential core of a liberal education. Indeed, so great is the diversity of these requirements that if any one of these institutions is exactly right, all the rest must be wrong. The amount of required work ranges from three hours in Wyoming to thirty-nine and one-half hours in

TABLE  
REQUIREMENTS FOR THE A. B.

	Latin	Greek	FOREIGN LANGUAGES	Chemistry	Physics	Astronomy	Zoology	NAT. SCIENCE	Philosophy	Ethics	Logic	Psychology	Physical Culture	ENGLISH	Composition	English Literature
Alabama	6		16					4 <sup>1</sup>						6	3	1.5
Arkansas			6 or 7					2	2				4	6	3	
Colorado			7.5 <sup>14</sup>					14				2.5	5	5		
Florida	6		14	3			3						2	6	1.5	3
Georgia	6		12		3		3						2	3	1.5	
Idaho			12										2	8	3.5	3.5
Illinois			4										4	4		1
Indiana			10 <sup>4</sup>		5 <sup>5</sup>			5 <sup>5</sup>					12	12	2	
Iowa			4 or 5										4 <sup>2</sup>	5	1	3
Kansas													3.5	5 <sup>17</sup>		
Kentucky	6		6										5			
Minnesota													2	1.5		
Mississippi			3	1	1		3	1					3	3	1.5	
Missouri			5 <sup>7</sup>				5									
Nevada	7		14				4						5	6	1.5	
New Mexico			12 <sup>13</sup>								1			3	3	
Ohio	4	8	12	2.6			2	4.6						2.3		2.3
Oklahoma													2	3	3	
Pennsylvania																
University			6 <sup>11</sup>	3	2		5		1	1				6		
Pennsylvania																
State	15		23			2							3	6.5	2.5	4
South Carolina			12				3		2	1.5				6	1.5	3
Tennessee			12 <sup>7</sup>				3			2			5	6		
Utah													3	3	3	
Vermont	4	4	8						3					6	3	1
Virginia			9				6	3 <sup>16</sup>						6		
Washington			8				4	2	2				4	8	4	4
Wisconsin			8 <sup>12</sup>				5							3	3	
Wyoming														3	3	
Texas			12 <sup>18</sup>				6						R 6	6	1.5	

<sup>1</sup> 4 or 7.

<sup>2</sup> See group plans.

<sup>3</sup> Gymnasium, military drill, or hygiene.

<sup>4</sup> All in any one language, or in two languages.

<sup>5</sup> Mathematics or physics.

<sup>6</sup> Economics or sociology.

<sup>7</sup> Half ancient, half modern.

<sup>8</sup> Logic and psychology, or mathematics.

<sup>9</sup> 8 must be modern.

<sup>10</sup> 2500 "college hours."

<sup>11</sup> Three hours in each of two languages.

<sup>12</sup> 8, if 4 have been offered for entrance.



# REQUIREMENTS FOR THE A. B. DEGREE 167

## I

### DEGREE IN STATE UNIVERSITIES

Rhetoric	MATHEMATICS	Trigonometry	Solid Geometry	Anal. Geometry	Calculus	Algebra	HISTORY	American History	General History	Economics	Elocution	Sociology	Thesis	Education	Hygiene	Bibliography	Total required	Total for Degree
1.5	9 <sup>13</sup>	1.5	1.5	1.5		4.5	3.5	2	1.5 <sup>13</sup>		1						39.5	65
3	2						2										16	64
	14						3										18	60
1.5	8	2.5	2.5	2		1	5	3	2					3			38	71
1.5	12	3	1.5	3	1.5	3	6	1	5					3			39	67
1	4	1.5				2.5											26	66
3																	12	65
	5 <sup>5</sup>														1		13	60
1															4 <sup>3</sup>		14	62.5
5															.5		4	60
	2.5		1.5			1											11	69
1.5	2.5					2.5	1			1 <sup>6</sup>		1 <sup>6</sup>					6	62.5
	2.5						2.5										15.5	65
1.5	3	1	.5			1.5	5		5				R				15	60
																	37	62
	2.6	1.3				1.3	1		1	1.3			1.6		2.6		28	10
							3	3					2			.5	10.5	62.5
	2						2										23	60
	4	2		2			3			4	2						51	70
1.5	6	1.5	1.5	1.5		1.5	6	1.5	4.5					3			38	67
	3																29	60
2	3	1	.5			1.5					R		R		R		6	61
	3						3 <sup>15</sup>			3 <sup>15</sup>				3 <sup>16</sup>			21.5	58
	2	2					2		2								27	52+
	3						3					2					32	64
																	24	60
.5	3									3 <sup>18</sup>							3	63
																	27+	60

<sup>13</sup> 1.5 units of mathematics may be exchanged for 1.5 units of history.

<sup>14</sup> Mathematics or science may be substituted for languages.

<sup>15</sup> History or economics.

<sup>16</sup> Philosophy or education.

<sup>17</sup> May be offered for admission.

<sup>18</sup> Required for men.

<sup>19</sup> 4 courses are required in 1 or 2 languages.

NOTE. — The University of Alabama requires 16 hours of foreign language study, 10 of which must be chosen from Greek, French, and German, 6 of which must be in Latin. Other language requirements may be read in this way.

R = Required.

Alabama. There is no conspicuous central tendency, and the average deviation, in this particular, of the individual institutions from their average is great.

The foot-notes to Table I give further evidence of the incomprehensible action of college faculties when they undertake to lay down arbitrary restrictions concerning the curriculum for all students. The vast amount of miscellaneous experimenting with the college curriculum that has produced the temporary results set forth in this table gives point to the remark of Professor Cattell that the collective unwisdom of a college faculty is not often exceeded by an individual student. Any one who has observed a college faculty make a decision at one meeting and promptly reverse it at the next, without a particle of new evidence on the issue, is not unreasonably skeptical concerning the stability or the worth of the regulations summarized in these tables.

Table II presents the subjects required for the A. B. degree and the number of year-hours allotted to each in certain universities under private control. The variation here exhibited

is even greater than that for state universities. Here again the curriculum appears to be administered in the familiar, historical way, — not according to any clearly defined and abiding principle, but according to personal equations of the moment and the place. Table II indicates also the subjects prescribed in certain colleges for women, the most nearly uniform group it is possible to find.

Table III presents the practice of forty small colleges in all parts of the country. It would seem that the almost innumerable differences here revealed must shake the confidence of any faculty in the wisdom of its absolute prescriptions, and yet the table excludes those colleges exhibiting the greatest idiosyncrasies in their requirements. So widely divergent are the regulations of a hundred other colleges included in this investigation that it would be impossible to include them in any useful table. President Jordan recently said: "For courses of mixed science, literature, art and philosophy, so many units of one, so many of another, disjointed fragments brought together in the name of culture, the student can have no re-

TABLE

REQUIREMENTS FOR THE A. B.

	Latin	Greek	French	German	Spanish	FOREIGN LANG.	Chemistry	Physics	Biology	Geology	NATURAL SCIENCE	Philosophy	Ethics	Logic
Brown, R. I.						12 <sup>1</sup>					3	3		
College of New York, <sup>10</sup>														
N. Y.	3		2	2		7	3	3			9	4		
Columbia, N. Y.						9 <sup>3</sup>	4 <sup>4</sup>	4 <sup>4</sup>			7 <sup>4</sup>	3 <sup>3</sup>		
Cornell, N. Y.						3					3	3 <sup>3</sup>		
Harvard, Mass.						3 <sup>5</sup>								
Johns Hopkins, Md.			3	3		6	3				5 or 6 <sup>7</sup>	3		
Stanford, <sup>8</sup> Cal.														
New York, N. Y.							1		1		1			
Northwestern, Ill.						3					4	3 <sup>11</sup>		
Princeton, N. J.	6 <sup>12</sup>	6 <sup>12</sup>				14		4			4	3		
Rochester, N. Y.	5	5	5			15		1.5	2.6	1.6	5	5	1.6	1.6
Syracuse, <sup>9</sup> N. Y.	7	6	3 <sup>4</sup>	3 <sup>4</sup>	3 <sup>4</sup>	16					3			
Washington, Mo.						6					3			
Western Reserve, Ohio	3					3								

REQUIREMENTS FOR THE A. B.

Bryn Mawr, Penn.						5					5	5		
Mount Holyoke, Mass.	3					6	3 <sup>4</sup>	3 <sup>4</sup>			6	1.5		
Pennsylvania, Penn.						6					3		1.5	1
Rockford, Ill.	4					8					8 <sup>14</sup>		1.5	1
Smith, Mass.						6					3	1		1
Sweet Briar, <sup>15</sup> Va.						6					3	3	1.5	
Vassar, N. Y.						6 <sup>1</sup>					3	1.5	1.5	
Wellesley, Mass.						3					6	3		
Welle, N. Y.	3					6					6			1.5

<sup>1</sup> Half ancient; half modern.<sup>2</sup> English and history, 3; philosophy and mathematics, 3.<sup>3</sup> French or German, 6; Latin or Greek, 3.<sup>4</sup> Alternative prescription.<sup>5</sup> May be offered for entrance.<sup>6</sup> Political economy may be offered instead of history.<sup>7</sup> Laboratory course in physics, chemistry, or natural history.<sup>8</sup> If English has been passed for entrance, no requirements are made.<sup>9</sup> Group plan.<sup>10</sup> An ancient language or a science may be substituted.

## II

## DEGREE IN PRIVATE UNIVERSITIES

Psychology	Bible	Physical Culture	ENGLISH	Composition	English Literature	Rhetoric	MATHEMATICS	Trigonometry	Solid Geometry	Anal. Geometry	Calculus	Algebra	HISTORY	American History	General History	Economics	Elocution	Thesis	Total required	Total for Degree
			6	1.5	3	1.5	7	1.3	1.3	2	1	1.3	6	3	3				37	60
		4	6	3	2		3		1.5			1.5	4	1	3	3			41.5	73
			3 <sup>2</sup>				3 <sup>2</sup>						3 <sup>2</sup>		3				28	62
			3 <sup>15</sup>																12	60
																			6	51 or
		5	6		3	3	1.5						3 <sup>6</sup>				1.5		31	52.5
			5 <sup>17</sup>	5															32	60
3 <sup>11</sup>		1	2	1		1	3 <sup>10</sup>						3 <sup>11</sup>					1	6	57
		3	5	3	2		4								3 <sup>11</sup>				21	60
1.6		6	6.6		2	4.6	4	1.3	1.3			1.3	3	3		1.6	1		27	61
	R	3	3			3	3								3				47.3	60
		6	6	1.5	3	1.5													26	60
	.5	3	4	1	1.5	1.5	3												15	60
																			13.5	60

## DEGREE IN COLLEGES FOR WOMEN

1.5	3		10	2	7	1						5 <sup>16</sup>							30	60
1.5	4		7.5	3	3	1.5	4	1.5	.5		1	3							32.5	60
3	2		6	1.5	3	1.5	8	2	2	2	2	3		3					30	56
1	2	4	2	1	1	1	3	1.5	1.5	2	2	3		3					41.5	59
1.5			6		6							3		3					21	56
			3	3			3	1	1			3		3					25	61
	4	1	4	4		4	1	1.5		1.5		3		3					21	61
1.5	2	1.5	5	1.5	2	1.5	3	1.5	1.5										22	58
																			26.5	57.5

11 3 hours to be chosen.

12 In second year, one term of each.

13 Physics or philology.

14 Work must be done in two departments.

15 4.5 if grade in English A is D.

16 A science, history, economics and politics, philosophy, or mathematics may be offered instead of history.

17 May be offered for admission.

18 Hygiene, 1.

19 Nat. hist. 3; esthetics, 1.5; drawing, 1.

R= Required.

TABLE  
REQUIREMENTS FOR THE A. B.

	Latin	Greek	French	German	FOREIGN LANGUAGES	Chemistry	Physics	Botany	Biology	Geology	Zoology	NAT. SCIENCE	Philosophy	Ethics	Logic	Psychology
Allegheny, Penn.	7	7		4	18							4		1.5		1.5
Amherst, Mass.	3	3			6											
Bates, Me.	3			8	12									.3		1
Beloit, Wis.					6							3				
Bowdoin, Me.			6	6	12											
Butler, Ind.					10							5				
Carleton, Minn.					8											2
Carroll, Wis.					12							5			1.5	1.5
Colby, Me.	4	3	3		10	3						3				
Colorado, Col.												3	4		1.5	1.5
Cornell, <sup>1</sup> Iowa					13											
Detroit, Mich.	14	12			26							10	12			
Dickinson, Mich.	4	4			8				1.5			1.5			1.5	1.5
Drury, Mo.					6							3	3			
Franklin and Mar-																
shall, Penn.	7	7 <sup>1</sup>			20	3	3		2			8				2
Grinnell, Iowa					10							3				3
Haverford, Penn.	7				14								1	1		
Hobart, N. Y.					12							6			1.5	1.5
Illinois, Ill.					10							5				
Kenyon, Ohio					4							4				
Knox, Ill.	4				6									1	1	2
Lafayette, Penn.	8	8	1.33	1.66	19	1	4					5	4			
Lake Forest, Ill.														1.5		1.5
Miami, Ohio					6							4			1	2
Monmouth, Ill.																
Oberlin, Ohio					4								10.5	10		1.5
Occidental, Cal.												3		1.5	1.5	1.5
Pomona, Cal.					4 <sup>2</sup>							4		1	1	1
Ripon, Wis.																
Rollins, Fla.					10	5 <sup>0</sup>	5 <sup>0</sup>	1.5		1.5	1.5	9.5	2.5	2.5	2.5	2.5
Swarthmore, Penn.					6							3				
Trinity, N. C.	6	2			8							9 <sup>6</sup>				
Tufts, Mass.					9							6				
Wake Forest, N. C.	5				8	3	3		3			9				
Washburn, Kan.					3							4				
Washington, and Lee, Va.																
Weeleyan, Conn.					3											
William and Mary, Va.	6				12				2.5			5		1	1	3
William Jewell, Mo.	3	3			9							6		2.3	1	1.3
Williams, Mass.	3				6											

<sup>1</sup> 14 for those beginning Greek.<sup>2</sup> 8 for those beginning modern languages.<sup>3</sup> Trig. and anal. geom. for some.<sup>4</sup> 3 Science or math.<sup>5</sup> 3 Science or history.<sup>6</sup> 3 Econ. or history.

## III

## DEGREE IN PRIVATE COLLEGES.

Bible	Phys. Culture	ENGLISH	Composition	Amer. Lit.	Eng. Lit.	Rhetoric	Mathematics	Trigonometry	Solid Geometry	Anal. Geometry	Calculus	Algebra	History	Amer. History	Gen. History	Economics	Elocution	Material Science	Sociology	Thesis	Total required	Total for Degree
1	1	5	3	1	1.5	3.5	4	2			2	2	3	3		1				R	39	60
1	9	3	3	1	1	4	4	2			2	2	1.5			2					16	50
1	5.5	2	1		2.5	2	4	1.5	1								1.5				12	60
4		2				2	4													R	31	52
4	4	3	3		1.5	4	4	1.5	1	2		2	4				1				25	60
4	4	6	4	2	2	1.5	2.5	2.5				1.5	2	2	1			5			23	60
1	12	6	1		3	2	6	2	1			2	6				4				37	62
3	7	7		3	3	4	3	1.5				1.5	3	3			1				72	72 <sup>a</sup>
4	8	5	2		4		4	1.5					4		2						28	52
4	4	3	3	1	2	2	3	1	1			1.5	3 <sup>b</sup>								58	58
4	4	5	1.5		3	1.5	4	2				2	3	3	1.5						25	60
4	3	8	2		3	3	5						3								35	73
1	2	7	4		3	3							3	3							17.5	60
2	2	5	2		3		3.5	1.5				2	3	3	3		1				34	65
3	3	3.5	4				6.6						1				1.5				18	66
3	2	4	4				3	1		2		3					4				25	60
4	4	6	3		3		3					1									46.1	64
3																					15	52
4	4	4	4				3	1.5		1.5							4				27	60
4	2	5	2		1	4	1.5	1					3	3							4	64
4	2	5	2	2	2	4				2	2		4		4					R	13	60
2	2	2																			26.5	64
1.5	1	5	1.5	6	1.5	5 <sup>a</sup>		1.5				1.5	3	3				3	2		31	64
4	2	6	3		3	3	5	1.5		1.5		3	3	3							2	60
	5	3	3		3		6	1.5	1.5	1.5		1.5									56	68
	5	5	1.5	3	1.5	5	3	1.5				.33	3	3	3						19.5	63
	3	3	3			3						1.5									35	64
		3																			28	61
		4	2			2															37	60
		7					4	2	1			1	3	3	2.5					R	13	61
3	5	3			3		1.5	1.5								1.5					5	60
3	2	1			1	5	1	1				3				.5					7	50
																					41	50
																					38	64
																					16.5	62

7 3 Greek, math. or modern lang.  
 8 "Christian science." Catholic college.  
 9 1 Collegiate life and work.

R Required with no stated credit.  
 O Alternative prescriptions.

spect. Required courses of this fashion have passed away never to return." That this old type of prescribed curriculum has not yet passed away, Table III bears witness.

College catalogs from all parts of the country tell us that "students are required to pursue those subjects that are universally regarded as essential to a liberal education." It would be pertinent to ask the writers of such statements to examine Tables I, II, and III, and then name those subjects that are universally regarded as essential to a liberal education. Is there one? Even the general prescription of English is an agreement in name only; what actually goes on under this name is so diverse as to show that we have not yet discovered an "essential" course in English. And this is our nearest approach to agreement.

In most institutions the old compulsory programs of study have broken down of their own weight. Although, as the tables clearly show, nearly all colleges retain some vestige of the prescribed régime, yet in recent years most of the attempts to regulate the courses of study of individual students have dealt



with systems of major and minor groups,—  
 devices for enforcing concentration and dis-  
 tribution of studies. Various practices of this  
 kind we shall now consider in some detail.

## CHAPTER X

### CONCENTRATION AND DISTRIBUTION OF STUDIES

#### *The Harvard Plan*

THE most conspicuous of all the plans for compulsory concentration and distribution of studies is that which went into effect with the class of 1914 at Harvard College. After more than forty years of consistent, acknowledged leadership as the modern champion of the Elective System, followed at the respectable distance of about a decade even by Yale and the lesser powers within her sphere of influence, Harvard College took what some believers in President Eliot's educational philosophy regard as a retroactive step. President Lowell secured the adoption of rules requiring of all students some degree both of scattering and of specialization in the choice of courses for the A. B. degree. This limitation of freedom came at the close of the longest and most liberal experience with the Elective

System in the history of Education. Furthermore, the membership of the committee that proposed the new rules was such as to bespeak for them careful consideration. That committee was composed of the following members of the faculty: President Lowell, chairman; Dean L. B. R. Briggs, Dean C. H. Haskins, Dean B. S. Hurlbut, Dean W. C. Sabine, Professor C. P. Parker, Professor E. K. Rand, Professor T. W. Richards, Assistant Professor R. B. Merriman.

The rules are as follows: I. Every student shall take at least six of his courses in some one department, or in one of the recognized fields for distinction. II. For purposes of distribution all the courses open to undergraduates shall be divided among the following four general groups. Every student shall distribute at least six of his courses among the three general groups in which his chief work does not lie, and he shall take in each group not less than one course, and not less than three in any two groups. The groups and branches are: 1. Language, literature, fine arts, music. 2. Natural sciences. (*a*) physics, chemistry, astronomy, engineering. (*b*) biology, physio-

logy, geology, mining. 3. History, politics, economics, sociology, education, anthropology. 4. Philosophy and mathematics.

The committee was instructed in administering these general rules for the choice of electives by candidates for a degree in Harvard College to make exceptions to the rules freely in the case of earnest men who desire to change at a later time the plans made in their Freshman year, and to make liberal allowances for students who show that their courses are well distributed, even though they may not conform exactly to the rules laid down for distribution. In making exceptions to the rules, a man's previous training and outside reading are taken into account. The central principle of the whole plan is that each student must take a considerable amount of work in some one field and that the rest of his courses must be well distributed.

The question at once arises, to what extent these restrictions will influence students in the election of studies. The best available evidence on this question is the programs of study actually chosen under the Elective System. Of the men who graduated from the Harvard Law

School *cum laude* for a decade previous to 1908, only one-seventh did not take six courses in some one field. The students in the Harvard Medical School whose undergraduate courses were examined had distributed their courses, but had not concentrated nearly so much as the honor men in the Law School. Only about one-sixth of them had taken six courses in any one field. Of one thousand men from the Classes of 1908 and 1909 in Harvard College, only about 20 per cent met all the requirements of the new rules. Had those restrictions been in force, about half of these students would have been compelled to change one or two courses. Only a few would have needed as many as five changes in their programs.

The degree of concentration represented by six Harvard courses is in excess of that chosen by the best students under the early Elective System. Of the first forty men in scholarship of the Class of 1880, seventy-five per cent had fewer than five courses in their major subjects,—even if we include the prescribed courses of Freshman year. Only one of these men chose to specialize to the extent required

by the new Harvard rules. The median degree of specialization of this selected group of high scholars was about three and one-half courses; and, as all investigations show, the poorer students scatter their electives more than the better students. Yet the offerings to the Class of 1880 were not half as extensive as the offerings of the present curriculum.

Fifty complete programs of study taken at random, alphabetically, from the Class of 1909 at Harvard and an equal number from the Class of 1909 at Yale reveal the following facts. At Harvard 22 per cent, at Yale 68 per cent, did not take one-third of their work in one subject. Only one student at Harvard and only two at Yale failed to take one-fourth of their work in one subject. Seventeen men at Harvard and only one at Yale took no courses in science; ten at Harvard took no courses in philosophy or mathematics; two at Harvard elected no course in the history group. There were no other instances in either college of the omission by any student of one of the four groups of studies. This is evidence that the Harvard plan for restricting the Elective System is likely to influence but few choices at Harvard.

*Concentration and Distribution of Studies  
in Other Colleges*

That students in other institutions do not specialize to the extent required by the Harvard faculty is evident from the sample programs collected in 1910 by the Committee on Collegiate Instruction of Section L of the American Association. The committee secured 500 complete records of the courses taken for the bachelor's degree by students representing random samplings of the Class of 1909 in the following institutions: Beloit (27), Bowdoin (36), Columbia (21), Cornell (42), Harvard (50), Knox (13), Lake Forest (10), Marietta (10), Princeton (49), Ripon (10), Stanford (20), Wabash (22), Wellesley (22), Wesleyan (38), Williams (40), Yale (95). These were worked over by the chairman, Professor Edward L. Thorndike, into complete tables like IV, the first line of which reads, "Individual A did 18 per cent of the total work required for the degree, in courses in ancient languages; 18 per cent of it in courses in modern foreign languages; 13 per cent of it in English; 5 per cent of it in philosophy; 32 per cent of it in

TABLE IV

SAMPLES OF THE WORK DONE FOR THE A. B. DEGREE BY  
INDIVIDUAL STUDENTS

		Latin, Greek, Sanskrit	French, German, Spanish, Italian	English	Philosophy, Psycho- logy, Logic, Ethics, Anthropology	History, Economics, Government	Physics, Chemistry	Biological Sciences	Geology, Astronomy, Geography	Mathematics	Music, Fine Arts
Cases from Princeton	A	18	18	13	5	32	5		2	6	
	B	30	3	15	7	32	5			6	
	C	32	3	30	5	15	5			6	
	D	18	18	15	5	32	5			6	
	E	18	18	8	5	34	5			6	
	F	20	13	8	5	32	7		2	6	
	G	18	13	25	5	22	5			11	5
	H	18	13	15	5	36	5			6	
	I	23	8	6	5	39	5			6	
	J	20	10	15	12	30	5		2	6	2
	A		24	12	3		47	3		6	
	B		18	9		6	41		9	12	
Cases from Harvard	C	12	6	35	38	6					
	D		68	15		24					
	E	12	12	6	6	12	12			29	6
	F		18	27	15	47	6				6
	G <sup>1</sup>		12	18	15	21	12		3		29
	H	29	12	12	3	35	6		3	9	6
	I <sup>2</sup>		24	15		62		3			
	J <sup>3</sup>		18	18		24	12		18		6

<sup>1</sup> Also 12 architecture and 3 engineering.

<sup>2</sup> Also 6 education.

<sup>3</sup> Also 9 mining and 9 engineering.



history, economics, etc." These complete tables are too long to be printed, but they cannot be summarized in lower terms. Tables V and

TABLE V

	No. of Cases	No. spending at least 50 per cent of the Total Degree Requirement in :						
		Language and Literature	History, Economics, etc.	All Natural Science	Engineering	Medicine	Architecture	Law
I. Stanford	20		1	4	5			(a)
Columbia	21	5			2	2	1	
Cornell	42	6	4	7		(a)		(a)
II. Harvard	50	16	8	3	1			
III. Beloit, Knox	93	15	3					
Marietta								
Ripon and								
Wabash								
IV. Bowdoin	36	22		2				
Wesleyan	38	20						
Williams	40	15						
Wellesley	22	12		1	See note	(b)		
Yale	95	25	3	1				
Princeton	49	15						
Total	506	151	19	18	7 or 7(a)	2 5	1 1	0 11 by

(a) If the combination of the *hist. ec. gov.* group with law is counted as one group, and if the combination of science and medicine is counted as one group, we have added 11 cases (8 at Stanford, 3 at Cornell) of the former sort and 5 cases (at Cornell) of the latter sort of specialization.

(b) One case for music and art.

Of these cases of apparent scattering 34 are individuals, each giving over three-tenths of the total degree requirement to history, economics, etc., and many of the others represent conceivably closely related work. This is the case, for example, with four of the six cases from Harvard.

VI give samples of the answers which may be got from them, using two arbitrary questions about the extent of specialization and superficiality.

TABLE VI

	NUMBER OF CASES	Number not devoting 20 per cent of the Total Degree Requirements to any one of the following: (1) Ancient Languages. (2) Modern Foreign Languages. (3) English. (4) Philosophy, etc. (5) History. (6) Economics. (7) Government and Public Law. (8) Physics and Chemistry. (9) Biological Science. (10) Other Natural Sciences. (11) Mathematics. (12) Art and Music. (13) Education. (14) Law. (15) Medicine. (16) Engineering. (17) Architecture	PER CENT.
I. Stanford	20	0	0
Columbia	21	0	0
Cornell	42	0	0
II. Harvard	50	6	12
III. Beloit, Knox Marietta Ripon and Wabash	93	16	17
IV. Bowdoin	36	0	0
Wesleyan	38	3	8
Williams	40	2	5
Wellesley	22	0	0
Yale	95	7	7 $\frac{1}{2}$
Princeton	49	23	47
Total	506	67	13

The complete tables show that few students specialized to the extent of six three-hour

courses in one subject. Of the 200 programs from Princeton, Williams, Columbia, Wabash, Beloit, Wesleyan and Wellesley, 171 indicated no such degree of concentration.

*Concentration and Distribution in the  
Small College*

There can be no better way to consider the need of a small college for such rules as Harvard has adopted than to examine the actual programs developed under free election. A study of the entire courses of all the graduates of Bowdoin College of the Class of 1909 is therefore profitable. This class of fifty-four members took its entire work under an Elective System which, for our present purposes, may be regarded as virtually unrestricted. It is true that a concentration requirement existed. Each student was obliged to complete before graduation either one major and two minor subjects or two major subjects. A major subject was one pursued for three consecutive years. A minor subject was one pursued for two years. A detailed study of all the electives of five classes, however, supplemented by personal inquiry, revealed the fact that apparently

not more than one or two students in any class were limited in their choice by these rules. Above 90 per cent of all the students concentrated their work in excess of the prescribed amount. Finally, since every student took more hours in the language and literature group than the rules specified, and since he was at liberty entirely to ignore the other three groups (2. Natural sciences; 3. History, political and social sciences; 4. Philosophy and mathematics), we can here discover to what extent the Harvard regulations, had they been operative, would have modified the fifty-four individual programs, which were, in fact, under no such restrictions.

In the first place, the concentration requirement, if interpreted literally, would have changed every program in the class. No student took one-third of his courses in one subject. Eleven took 14-19 per cent in their major subject; twenty took 20-24 per cent; twenty-one took 25-30 per cent; two took 33 per cent. On the other hand, if we inquire how many elected one-third of their work from advanced courses in language and literature, we find that at Bowdoin all but four of the class

chose this degree of concentration. (The student who devoted the smallest proportion of his time to his major group gave 36 per cent to natural sciences and 29 per cent to language and literature.) Three of the four exceptions just noted were students who received honors from the faculty and whose electives would have been approved by any committee instructed "to make exceptions to the rules freely in the case of earnest men."

A significant comparison may be made between the degree of specialization twenty years ago, when the studies were mainly prescribed, and the degree of specialization to-day under free election. Ninety per cent of the class of 1890 spent only 13 or 14 per cent on their major subjects. Ninety-seven per cent of the class of 1909 took above 18 per cent of their work in their major subjects (not counting closely related subjects). The most highly specialized course under the old prescribed régime was more scattered than the most widely distributed course under the Elective System. This is graphically shown in Figure I. Evidently there was not the slightest ground at Bowdoin for the oft-expressed fear that the

new freedom of choice would result in greater scattering of studies.

With reference to the Harvard rules for distribution among the three groups other than the student's major group, the electives of these fifty-four Bowdoin men exhibit the following results: four students fell one-half course short of the requirement in natural science; four students fell one course short, and one student fell one half-course short of the requirement in history, political and social sciences; three students fell one-half course short of the requirement in philosophy and mathematics; no student failed to meet the requirement in language and literature.

To satisfy the complicated Harvard rule regarding the distribution of the six courses among the three groups, five students would have been obliged to substitute for a choice in literature a course in one of the other groups. Such are the few scattering cases that would have been slightly affected by the new Harvard rules, had these rules been operative, and had the committee not included these few cases within the excuse limits of their liberal instructions. Each of these students could have

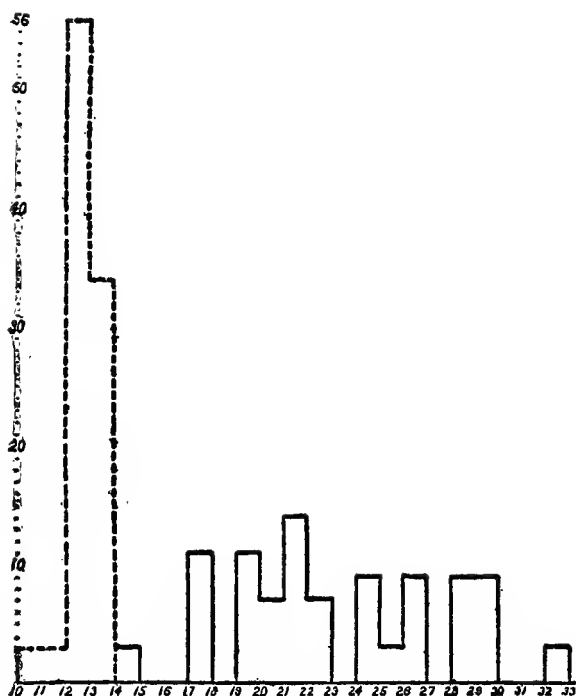


FIGURE 1. Bowdoin College; classee of 1890 and 1909. Showing degrees of specialization in the electives of classes twenty years apart.

Class of 1890 = - - - - -

Class of 1909 = —————

presented adequate reasons for his slight departure from the necessarily arbitrary scheme which its devisers agree should be administered with free allowance for individual needs. Even without such allowance, less than two per cent of the units in the total schedules of this class would have been changed by the Harvard distribution rules. If, therefore, the total experience of this class is any criterion by which to judge the future, — and no better one is possible, — the adoption by Bowdoin of the Harvard scattering requirements would have only a negligible effect. Nearly, if not all, that the new plan for compulsory distribution of studies at Harvard aims to achieve is, in fact, already achieved under the much more restricted curriculum and the virtually unrestricted Elective System of a typical small college.

### *Present Major and Minor Requirements*

Various attempts to regulate the electives of college students are summarized, as far as it is possible to summarize such diverse practices, in Tables VIII, IX, and X. The sources of information are for the most part the cata-



logs for 1909-1910 of the sixty-eight institutions included in the tables.<sup>1</sup> Table VIII

<sup>1</sup> See especially Leland Stanford Junior University, *Reports of the President*: December, 1904, p. 16; April, 1906, p. 75; December, 1906, pp. 60-89; December, 1907, p. 68.

"The Degree of Bachelor of Arts (A. B.) will be granted to students who have satisfactorily completed the equivalent of four years' work of fifteen hours of lecture or recitation weekly. It is further provided that each student shall select as his major subject or specialty the work of some one professor. This professor shall have the authority to require such student to complete this major subject, and also as minor subjects such work in other departments as the professor may regard as necessary or desirable collateral work. Such major and minor subjects taken together will not exceed the equivalent of five recitations per week, or one-third of the student's time for the four years of undergraduate work. It is also provided that each candidate for a baccalaureate degree must take, before graduation, Course 1 in English. With these exceptions, all the undergraduate work in all the courses is elective. The student may freely choose for such elective work any subject taught in the university, which his previous studies have prepared him to undertake." — Leland Stanford Junior *Register*, 1891-92, p. 33.

"Whether the student is qualified for enrollment in any particular class is a question to be decided by the instructor in charge. A student desiring to drop a subject once taken up, or to take up a new subject after the study card has been filed, must present to the Committee on Registration a petition for such change, approved by the major department and by the instructors whose subjects are to be taken or dropped. Petitions to change the major subject will be granted when approved by the departments in charge of both the old and

presents the facts for twenty-three state universities; Table IX, for thirteen private universities and for seven colleges for women; Table X, for twenty-five small colleges. The investigation covered two hundred of the better known colleges and universities. Those remain in which the curriculum regulations were sufficiently clear, and sufficiently free from excessive complications and eccentricities, to render tabulation possible.

Even these groups of colleges and universities, selected for the relative simplicity of their requirements, present great diversity and

the new subjects, the student being held to all the requirements of the new major subject. (First-year students may change their major subject at the end of the first or second semester without petition.) In general, the major subject may be changed at the end of the first year, and in some cases later, without appreciable loss of time to the student.

"Each student selects as his major subject or specialty the work of some one department. This department has the authority to require the completion of this major subject, and also of such minor subjects in other departments as may be considered necessary or desirable collateral work.

"The department in charge of the major subject of any student is expected to act as adviser to the student in educational matters, and the recommendation of the department is necessary to graduation." — Leland Stanford Junior *Register* for 1908-09, pp. 58, 59, 68.

complexity as their most striking features. In the number of subjects required, in the number of year-hours unrestricted, in the proportion of work called for by the major subject, in the proportion controlled by the major adviser, in the amount prescribed for distribution, in the maximum and minimum allowances for groups, there is no uniformity, not even any significant central tendencies.

Here, as in the attempts to prescribe "essential" subjects, the actual practices of colleges all over the country reveal no guiding principles. Most of these institutions force all students to do in general what their patchwork curriculum of a generation ago allowed no students to do. So innocent of abiding cause are these miscellaneous and contradictory regulations that the tables will be out of date, no doubt, shortly after they are printed. Indeed, such administrators as actually enforce these rules must be hard put to it for reasons, unless their students are uncommonly docile. One even wonders whether college officers can in all cases interpret their own rules. To one book of regulations the students added a rule of their own, as follows: "Rule 119. Any

student who can understand these rules will be granted a degree without further examination."

The most important facts included in these tables are the concentration requirements. The extent to which these colleges announce that they enforce specialization is shown in Table VII.

TABLE VII

PERCENTAGE OF TOTAL WORK REQUIRED IN MAJOR SUBJECT  
BY INSTITUTIONS IN TABLES VIII, IX, X

PER CENT	1	11 A	11 B	111	TOTAL
6-7.9				1	1
8-9.9				1	1
10, etc.	1		1	1	3
12	1			4	5
14	2	1	1	5	9
16	3	1		3	7
18	5			1	6
20	1	2	2	1	6
22				1	1
24	2		2	2	6
26	1				1
28		2			2
30	1			2	3
32		1	1	1	3
34		1			1

A glance at the column of totals shows that the median case falls in the 18-20 per cent group; that half the cases fall in the conspicuous 12-22 per cent mode; and that the

range of concentration requirements is from six to thirty-five per cent of the total degree requirements.

The median for small colleges (Column III) lies in the 14-16 per cent group. It is right that the concentration requirements in small colleges should be lower than in large colleges; for the greater the number of teachers and elective courses, the less burdensome is enforced specialization.

The statistics of actual student programs from various institutions, presented earlier in this chapter, warrant the assumption that not half of the concentration requirements in American colleges have more than a negligible effect. If compulsory specialization is preferable to complete election, then the proportion of a student's entire work required in his major subject should be more than one-fifth. Less than that is no compulsion at all,—only a pretense at "safeguarding" the Elective System. Whether there is evidence in favor of any degree of enforced specialization for undergraduates is a question we shall now consider in connection with a discussion of the relation between college studies and success in life.

TABLE VIII  
 REQUIREMENTS FOR CONCENTRATION AND DISTRIBUTION OF STUDIES  
 IN STATE UNIVERSITIES

	Total year-boure	No. of subjects	No. of year-boure	Year-boure in major	Hours subject to major adviser	Per cent major subject	Distribution of major into subjects	No. of hours in minor	Per cent in minor	Distribution of minor into subjects	No. of groups	Minimum allowed in major group	Maximum allowed in major group	Minimum allowed in any group
Arkansas <sup>15</sup>	60	4		18	24	.30	1				4	25		9
Colorado	60	4		15	25	.25					5 <sup>2</sup>			
Indiana <sup>15</sup>	60	5		9		.12		8	.12					8
Florida	71	6		12		.18								
Idaho	66	4	34	12		.18								
Illinois	65	3		12		.19								
Iowa	62.5	3		12		.16								
Kansas <sup>4</sup>	60	3		10		.14								5 <sup>2</sup>
Kentucky	69	2		9	24	.27	2 or 3 <sup>6</sup>	18 <sup>6</sup>	.23	4	3		30	
Minnesota	62.5	3		18		.20		6 <sup>7</sup>	.10					
Mississippi	65	7		127		.16								
Missouri	60	5		17		.10-.15	2 or 3 <sup>u</sup>					20 <sup>8</sup>		
Nevada	62	6		10								15		
New Mexico	62	3	8.5	6-9 <sup>u</sup>							4 <sup>9</sup>	18		
Oklahoma	62.5	4	22	6-9 <sup>u</sup>							8		24	
Pennsylvania	60	7												
Texas <sup>4</sup>	60	6									2			

Utah	61	2	12	24	.19	8	.12	2 or 3	
Washington <sup>1</sup>	64	8	34		.18			1 or 2	4
Wisconsin	60	6	10		.16				2
Wyoming	63	1	15		.24		.15		
Virginia	52-60	6				2			6 <sup>11</sup>
Vermont	58	7	9		.15	3 <sup>11</sup>	.6	2 <sup>11</sup>	3

<sup>1</sup> Not more than 9 may be offered in Group IV.

<sup>2</sup> Reduced to 3 groups for electives. 9 hours must be taken from the 2 groups in which major subject does not fall.

<sup>3</sup> 8 hours in each of 6 groups, previous to Junior year.

<sup>4</sup> Maximum allowed in any subject other than major: Kansas, 15; Washington, 12; Texas, 8 courses.

<sup>5</sup> 2 minors, or a major and a minor, may be combined in one department, but at least one of the 5 subjects shall be chosen from each of the groups.

<sup>6</sup> If a candidate elects 2, he is required to do 9-11 units in each. If he elects 3, he is required to do 6-8 units in each.

<sup>7</sup> A student recommended for honors in 2 subjects is thereby excused from both "major" and "minor" requirements.

<sup>8</sup> In case any student desires to do so, he may choose a minor department also. It must be in a correlated subject. If he elects a major department only, he shall be required to elect 20 hours' work in 2 years.

<sup>9</sup> The group work secures special training in 1 or 2 subjects. Students who do not take a special course elect their subjects under approval of major adviser.

<sup>10</sup> The minimum of six hours must be offered in 8 out of 8 groups.

<sup>11</sup> If 2 subjects are elected, 9 hours in each are required. If 3 subjects are elected, 8 hours in each are required.

<sup>12</sup> 5 advanced courses. (An advanced course is one which requires for admission to it the completion of 2 numbered courses in the same subject.)

<sup>13</sup> Electives-at-large must be selected from one of the 6 groups, and this group is the Major Group.

<sup>14</sup> A major consists of 3 courses in the same subject. A minor of 2 courses in consecutive years. A course consists of 3 or more hours per week for 1 year.

<sup>15</sup> Maximum allowed in any group: Arkansas, 36; Indiana, Kansas, Washington, Wisconsin, 20.

TABLE IX

REQUIREMENTS FOR CONCENTRATION AND DISTRIBUTION IN  
CERTAIN PRIVATE UNIVERSITIES (A) AND IN COLLEGES FOR  
WOMEN (B)

	Total year-hours for degree	No. of subjects	No. of year-hours	Year-hours in major	Hours subject to major adviser	Per cent major	No. of hours in minor	Per cent minor	No. of groups	Minimum in major group	Minimum allowed in any group
City of New York	73	10	41.5						3 <sup>1</sup>		
Columbia	62	27	23	18 <sup>2</sup>		.29					
Cornell	60	5	12		10	.16			12	10	
Harvard	52.5	2	6	18		.35			4	18	3
Johns Hopkins	60	9	31, 32	9		.15	6	.10	5		
Leland Stanford	60	1	.5		20 <sup>4</sup>	.33					
Northwestern	60	6	21								
Princeton	61	5	27			.29				18	
Rochester	60	9	47.3						77		
Syracuse	60	6	26	12	18	.20	6	.10	6		37
Western Reserve	60	5	13.5						3		6
Yale	60			12 <sup>3</sup>		.20	18 <sup>3</sup>	.30	3	17	5 <sup>3</sup>
Washington, <sup>3</sup> Mo.	60	3	15								
Bryn Mawr	60	5	30	20		.33					
Mt. Holyoke	60	8	32.5	15		.25					
Rockford <sup>10</sup>	59	10	41.5	12		.20					
Smith	56	9	21	6		.10	6 <sup>11</sup>	.10			
Sweet Briar	61	6	25	15		.24			6		
Wellesley	58	7	22	12 <sup>12</sup>		.20	6 <sup>12</sup>	.10	3 <sup>13</sup>		
Wells	57.5	7	26.5	19	18	.15	19	.15	3	12	12

<sup>1</sup> In I, Latin and Greek are prescribed major languages; one modern language is minor. In II, French and Latin are prescribed major languages, and German is minor. In III, French, German, and Spanish are studied in the order named; later, one year of Latin is required.

<sup>2</sup> The student must complete the equivalent of 3 years' sequential study in courses aggregating 9 points beyond the elementary requirement for admission in each of two departments.

<sup>3</sup> Maximum allowed in one department, 16.5.

<sup>4</sup> The department has authority to require completion of major subject, and also of such minor subjects in other departments as may seem necessary or desirable collateral work; not more than one-third of student's work.

<sup>5</sup> Minor to be in two subjects.

<sup>6</sup> Each Junior must choose a department and take all the Junior courses of that department. Three of his five courses must be in the division in which the department lies. Each Senior must continue his work in the Junior department, and must take at least three of the Senior courses in it.

<sup>7</sup> Grouping made to conform with major subject.

<sup>8</sup> When no course in the contemplated major is open to election before Sophomore year, prescribed number is 0.

<sup>9</sup> Five hours or more for each minor. One must be completed in each group, the three to make 18 hours in all.

<sup>10</sup> Two major subjects, or one major subject and one or two tributary subjects.

<sup>11</sup> One minor must be in a subject distinctly different from that of main study.

<sup>12</sup> Nine hours in each of three departments, related or unrelated, or 12 hours in one department and six hours in a second department, related or unrelated.

<sup>13</sup> Grades I, II, III; Grade I including elementary, and Grade III the most advanced courses. At least one full course of Grade III must be taken in Senior year. The 9-hour groups must consist of at least six hours above Grade I, three hours of which must be of Grade III. The 12-hour groups must consist of at least nine hours above Grade I, six hours of which must be of Grade III. The 6-hour groups must include at least three hours above Grade I.



TABLE X

REQUIREMENTS FOR CONCENTRATION AND DISTRIBUTION IN  
SMALL COLLEGES

	Total year-hours for degree	No. of subjects	No. of year-hours required	Year-hours in major.	Hours subject to major adviser	Per cent major	Distribution of major into subjects	No. of year-hours in minor	Per cent minor	Distribution of minor into subjects	No. of groups	Min. allowed in major group	Max. allowed in major group	Min. allowed in any group exclusive of major group
Bates, Me.	73	1.3	9			.14		12	.09	2	3	9		6
Beloit, Wis.	60	4	12	10		.16		12	.20	2	3			6
Bowdoin, Me.	62	4	22.5	9 <sup>1</sup>		.14	1	6 <sup>1</sup>	.09					
Carleton, <sup>2</sup> Minn.	65	4	18	10	30	.15	1	6	.09	1 or 2		10		6
Carroll, Wis.	62	8	31	10		.16						10	20 <sup>3</sup>	
Colby, Me.	7	25	6	6			2	6		2	3	6		3
Colorado, Col.	60	9	23	15	15	.25					4			
Drury, Mo.	62	7	28	6 <sup>1</sup>		.09	1	6 <sup>1</sup>	.09	1	3			
Grinnell, Ia.	60	6	25	10		.16		8	.13					
Hobart, N. Y.	60	8	17.5	12 <sup>5</sup>		.20		6 <sup>1</sup>	.10	1 or 4		12 <sup>5</sup>		
Illinois, Ill.	66	7	34	15 <sup>6</sup>		.22	1 or 2 <sup>8</sup>					15		
Kenyon, Ohio	66	6	18	9		.13		6	.09					
Lake Forest, Ill.	62	6	15	20		.32	2							
Miami, Ohio	60	7	27	18 <sup>7</sup>		.30	2 or 3 <sup>7</sup>							
Monmouth, Ill.	64	2	8	12	20	.18		8	.12					
Occidental, Cal.	64	9	26.5	9 <sup>8</sup>		.14	2				8			
Pomona, Cal.	64	10	31	8		.12	1	8	.12	2	8			
Ripon, Wis.	60	1	2	4		.06	1 or 2				8			
Swarthmore, Penn.	63	6	19.5	9	18 <sup>9</sup>	.14		3	.04			9		
Tufts, Mass.	61	6	28	9		.14		9	.14					
Washburn, Kan.	61	4	13	7 <sup>10</sup>		.11		4.2 <sup>4</sup>	.06, .03					
Washington and Lee, Va.	60	2	6	15		.25	1				3	15		15
Wesleyan, <sup>11</sup> Conn.	60	2	7	18-24		.30					3	18	24	
William and Mary, Va.	60	9	41	7.5		.12								
Williams, Mass.	62	5	16.5	7.5		.12								

1 One major and 2 minors, or 2 majors.

2 Maximum allowed in any subject beyond Freshman year, 12.

3 Includes two for thesis.

4 Major can be chosen only from a study pursued through the Sophomore year, and must be continued during Junior and Senior years. The minor must be studied throughout the Junior and Senior years.

5 Three minors or 2 majors in languages, 1 minor in sciences. A minor consists of 2 years' work in one department. A major is completed by taking an additional year's work in a minor. A double major requires an additional year's work in a major.

6 Fifteen hours if one department is chosen; 10 hours in each if two are chosen.

7 Nine hours in each of any two, or six hours in each of any three.

8 Six hours minimum allowed in either of two departments chosen.

9 The major adviser may determine the work of 18 hours, provided three shall not be in his own department.

10 Candidate may offer 7 hours major and 4 minor, or 9 hours major and 2 minor. Beginning with class of 1912, minimum major will be 8 hours, and minimum minor 5. Fourteen hours will be subject to major adviser.

11 Minimum allowed in Group I is 12 hours; 9 hours minimum in II and III.

## CHAPTER XI

### RELATION BETWEEN COLLEGE STUDIES AND SUCCESS IN LIFE

THE dominant purpose of all disinterested plans for administering the courses of study of undergraduates is to promote the success of men and women in the life beyond commencement, however variously success may be defined. Comparisons of the courses of study of successful graduates with random selections ought therefore to furnish evidence of considerable value on various obscure problems of college administration. If a man's success in life is in any marked degree correlated with the subjects studied in college, or the grades attained in college, or the extent of distribution or specialization of his courses, then scientific studies of the programs of successful men contrasted with the programs of men taken at random will reveal such correlations. The results of such studies would enable us to say at least this much: that success-

ful men do or do not elect more courses in classics, chemistry, etc.; that they do or do not attain higher standing in scholarship; that they do or do not scatter or concentrate more than college students as a whole.

The initial difficulty in any such study is the definition of "success." The mode of selecting men for distinction will seriously affect any conclusions that may be deduced. And, obviously, whether or not the conclusions of such a study will influence the administration of college curricula depends in part on the extent to which those in authority agree, in their conception of "success," with the adopted definition. *Who's Who in America* has been taken by many investigators as the sole criterion of distinction. Professor Dexter used this method in attempting to answer the question, What is the best college? (*World's Work*, April, 1903.) But his evidence does not warrant the conclusion that the small New England college is the best, for the reason that the errors incident to the use of *Who's Who* as a measure of success have the least effect on the older, small New England colleges. Professor Jastrow, on the other hand,

in his study of the distribution of distinction in American Colleges (*Educational Review*, 31:205), used *Who's Who* with greater care. He assumed merely that the average of distinction of those persons mentioned in *Who's Who* overwhelmingly exceeds the distinction of the average citizen; and that, considered in large groups, the people selected for this distinction represent the uppermost level of ability in some callings. With the treatment of large groups by approved statistical methods, and with due allowance for the various probable errors of compilation, *Who's Who* may be made the basis of trustworthy studies. For our purposes, however, the main objections to this definition of success are that certain callings are still unduly weighted, and that prominence overshadows inconspicuous worth. There is a kind of life which does not express itself in offices or publications or advertised philanthropy which, nevertheless, the best men of our best colleges would be glad to promote, if possible, by the administration of the curriculum.

*A Study of the Class of 1894, Harvard  
College*

For a single study in this field, three men were asked in 1910 to select from the Class of 1894 of Harvard College the students who since graduation had won success. The judges were LeBaron R. Briggs, Dean of Harvard College when these students were undergraduates, Edgar H. Wells, Secretary of the Harvard Alumni Association, and Frederic E. Farrington, Associate Professor of Educational Administration at Teachers College, Columbia University, and a member of the college class in question. Each judge was asked to make his own definition of success. That is to say, he was asked to choose those men who had achieved the kind of success which he would be glad to have Harvard College promote, if possible, by the administration of its curriculum. The only qualification was that men whose careers appeared to be greatly aided by social position or hereditary wealth should not be included in the successful group. The independent selections of these three judges furnished a list of twenty-three men, each of

whom was marked successful by at least two of the judges. The exact and complete college records of each of these twenty-three men were then copied from the college books, together with the records of twenty-three men chosen at random, being every fifth name in an alphabetical list of living members of the Class of 1894.

The number of individuals in each group who took at least six courses in a single subject is shown in Table XI. The average number of courses taken by the successful men in their major subject is 6.4; the average number for the whole class, as shown by the random group, is 5. This is a notable difference. Only seven of the successful men failed to elect six courses in one subject; thirteen of the other group failed to do so. Or, if we recognize history and economics as a field for distinction and concentration (as any wise committee instructed to interpret the rules freely would do), we find that 56 per cent of the random group, as opposed to only 17 per cent of the successful group, failed, under the Elective System of 1890-94, to concentrate as much as the Harvard rules of 1910 require. This

study of a single class, therefore, tends to support the conclusions of all the previous studies on this one point, namely, that the better scholars in college and the better men after

TABLE XI

NUMBER OF ELECTIONS BY EACH STUDENT IN HIS  
MAJOR SUBJECT

Group A		Group B	
<i>"Successful" Men</i>		<i>Random Selection</i>	
1 Geology	6	History	5
2 English	6	English	6
3 English	4	French	5
4 English	12	French	5
5 History	6	History	8
German			
6 French	4	English	5
English			
7 Latin	7	English	8
8 English	8	Economics	6
9 Latin	6	English	7
10 Mnsio	6	Latin	10
History			
11 English	5	Mathematics	6
Economics			
12 English	7	History	5
13 English	5	English	5
14 Geology	6	History	6
English			
15 History	5	English	4
16 Greek	7	English	4
17 Fine Arts	6	English	3
		History	
18 English	7	English	
		French	4
		History	
19 Latin	8	Chemistry	5
20 English	7	French	5
		Economics	5
21 Semitio	9	English	6
22 History	5	English	6
23 English	5	History	5

## DISTRIBUTION OF THE ABOVE TABLE

No. of Courses	Group A	Group B
3	0	1
4	2	3
5	5	9
6	7	6
7	5	1
8	2	2
9	1	0
10	0	1
11	0	0
12	1	0
Average	6.4	5.0
Mode	6	5

graduation, judged by the particular standards we have thus far used, do specialize to a significantly greater degree than other students.

Quite the contrary is true with respect to scattering. As shown in Table XII, the average number of subjects elected by the individuals of the successful group was 10.2, as opposed to 11.9 for the other group. Only one man in the random selection failed to satisfy the complicated requirements for distribution set forth in the new Harvard rules, whereas nine of the successful men failed to scatter as much as the new rules require. Only two men omitted more than one of the four Harvard groups, and only one man specialized wholly in one of the four groups. If the Class of 1894 is fairly re-



TABLE XII

NUMBER OF DIFFERENT SUBJECTS TAKEN BY EACH  
STUDENT IN EACH GROUP

	Group A <i>"Successful" Men</i>	Group B <i>Random Selection</i>
1	11	10
2	11	10
3	13	14
4	10	11
5	10	10
6	12	15
7	9	11
8	10	10
9	7	10
10	9	9
11	8	10
12	10	13
13	12	13
14	13	14
15	7	13
16	13	16
17	11	11
18	9	9
19	13	10
20	8	13
21	7	13
22	11	12
23	11	15

DISTRIBUTION OF STUDENTS WITH REFERENCE TO NUMBER  
OF DIFFERENT SUBJECTS ELECTED

No. of Subjects	Group A	Group B
7	3	
8	2	
9	3	2
10	4	6
11	5	3
12	2	1
13	4	6
14		2
15		2
16		1
Average	10.2	11.9
Median	10.7	12

presentative of all classes, and if the number of cases and the method of treatment here used are adequate, the new Harvard rules for scattering, if enforced, would interfere mainly with those students who are likely to achieve the greatest success in life. Nothing but *a priori* reasoning has so far been offered in favor of compulsory scattering of college studies.

One of the professors at Columbia University is probably right in his judgment that the Columbia College faculty, in requiring every freshman to take six or seven studies, unrelated to one another and largely unrelated to his past or future studies, prescribes a method which not one member of the faculty would be so foolish as to adopt in his own work. Emerson might well have had the college curriculum in mind when he said, "The one prudence in life is concentration, the one evil, dissipation."

Although the study of an individual program always suggests unwarranted generalizations, it will not be without profit at this point to consider the most extreme case of specialization in the Class of 1894. One man elected

all his courses from the language group. His career is the one in this class that would have been most interfered with by rules for scattering of electives. Yet he has achieved such distinction in his published studies and in his work at one of the leading universities of America that he would be selected as successful according to any creditable criterion. Of his life in college and of the Elective System, he says :—

My life at Harvard was a quiet one, as I kept pretty closely to my books. Despite this, however, my interest in all branches of college activity, although passive, was keen. I took no part in sports, although I enjoyed outdoor life and spent nearly every summer from my eighth year up to my graduation from college in camping, swimming, canoeing, etc. On competitive trial, I was elected a member of the Harvard Debating Society, but that was the end of my activity in that organization. I was again absorbed in my books, not only those in my own line, but in various branches, some allied to my work, some not. Languages and literature formed my chief interest. My linguistic curiosity eventually carried me off the beaten path of college study. From Greek and Latin, French, Spanish and English, I was attracted to Arabic and Hebrew, Assyrian and kindred tongues. German, I kept up all through my course. A Detur, Phi Beta Kappa, *summa cum laude*, Commencement Oration, and Final Honors in Semitic make up the sum of college dis-

tion. If I had my course over again, I should go in for debating, try my hand at athletic sports, and send in some contributions for the college journals.

I have no criticism to make of the elective system, except I favor concentration on fewer courses, with more hours a week in each course. For the student who is in earnest, it is certainly the best that can be devised. If the student does not know what he wants, or does not care what he gets, no system will ever solve his problem satisfactorily.

It is evident that this man followed just such a plan of concentration as a Darwin, or a Huxley, or an Edison would have chosen with delight, but a plan entirely unsuited to the weaklings in any college.

The results of this investigation are in accord with previous studies. A Harvard committee found, from the programs of a thousand recent graduates, that "the high scholars, the men who were studying earnestly, almost invariably concentrated enough to come into the plan we are speaking of, but they were very likely to concentrate too much. They were apt to leave some one of these great groups wholly untouched, or with only one course, where they ought to take two. In other words, we found that their courses, though profound,

were comparatively narrow. When we came to the men whose idea of the development of the brain consisted of developing it more through the muscles, we found that they were less apt to concentrate, and that the system would interfere with them because they did not concentrate enough. They were apt to diffuse, to distribute their courses."

In two other respects, this record of the Class of 1894 supports the conclusions that one is forced to draw from President Lowell's careful and extensive studies of the honor men in the Harvard schools of law and medicine for many years and the "plain degree" men of the same classes. In the first place, contrary to the popular notion, success in college as indicated by marks attained in college courses *does* give promise of success in later life. The men in this class who have attained success were awarded as undergraduates nearly four times as many highest grades as the random selection, — 196 as opposed to 56. This is the most significant fact in Table XIII. In the second place, as President Lowell's data show, it appears to make little difference what subjects a student elects. With exceptions to be

TABLE XIII

RELATIVE RANK IN ALL COURSES OF THE TWO GROUPS

Group A		Group B
<i>"Successful" Men</i>		<i>Random Selection</i>
A	196	56
B	180	183
C	156	247
D	33	75
E	11	16
Absent	8	8
No Returns		1
	<hr/> 584	<hr/> 586

TABLE XIV

NUMBER OF ELECTIONS IN EACH SUBJECT

Group A		Group B
<i>"Successful" Men</i>		<i>Random Selection</i>
Botany	8	9
Comparative Lit.	1	0
Chemistry	26	35
Philology	2	0
Engineering	4	8
English	116	99
Fine Arts	19	23
French	40	53
Geology	22	26
German	44	40
Government	15	17
Greek	43	18
History	59	84
Italian	9	5
Latin	49	30
Mathematics	29	31
Musio	8	2
Philosophy	19	24
Economics	45	45
Physics	4	11
Sanskrit	1	0
Semitio	11	10
Spanish	3	10
Zoölogy	7	4

noticed presently, the number of elections in each subject by each group in Table XIV shows no marked correlation between subjects elected and success in later life.

At this point some readers may care to hear the opinions of the Class of 1894, fifteen years after their graduation, concerning the Elective System of their college years. The secretary of the class secured 202 of these opinions. There were 52 men who expressed their unqualified approval of the Elective System, and 134 who indicated a belief in the system but a desire for further safeguards. All but eight objected to the administrative nonentity known as the freshman adviser. This is no objection to the Elective System, for it could remain intact with effective methods of advising students. Only 16 of the answers implied unqualified disapproval of the system.

### *Study of the Classics and Success in Life*

The successful group in this Class of 1894 chose nearly fifty per cent more work in the classics than the random group. The random group, on the other hand, chose twenty-five per cent more work in sciences than the

successful group. These facts would not deserve mention, drawn from such small groups, were it not for the fact that President Lowell's statistics from twenty classes, based on a different definition of success, reveal similar tendencies in the distribution of electives among departments. (Shown in Figure 8.) Furthermore, if we divide all the men who graduated from Harvard College between 1888 and 1900 into two groups, those who graduated with distinction, and those who did not, we find that in nine classes out of the thirteen the honor men elected Latin and Greek in slightly larger proportions than did the plain-degree men. (Shown in Figure 5.) Again, it appears to be more than a coincidence that an independent line of research at Bowdoin College shows that the fifty successful men of the classes from 1890 to 1900 specialized in classics more than the fifty men chosen at random, in the ratio of nineteen to thirteen, and that this was the most conspicuous difference in the subjects elected by the two groups.

It is certainly notable that in such extensive and independent studies, the most successful groups of men in college, in professional schools,



and in later life, invariably spent more time on the classics than the less successful or random selection of students. Some men will conclude that the Latin and Greek account for the greater measure of success; others will conclude that the boys who were destined by heredity to make the more successful men, came, in larger numbers than other boys, from homes devoted to the traditional education, and so gave more of their college courses to the study of the classics. The relative worth of these conflicting opinions, our available statistics cannot determine.

### *Phi Beta Kappa Men and Success in Life*

Using election to Phi Beta Kappa as the definition of success in college, and inclusion in *Who's Who* as the definition of success in later life, Professor E. G. Dexter made a study of the records before and after graduation of the high grade men of twenty-two colleges.<sup>1</sup> According to these definitions, the

<sup>1</sup> Dexter, E. G. "High Grade Men: In College and Out," *Popular Science Monthly*, 62:429. Only the averages of the percentages for each college are given. These are slightly misleading.

chances of success of a high grade man in college are nearly three times the chances of a random selection. Of the living graduates of these colleges about 2.1<sup>1</sup> per cent found their way into the columns of *Who's Who*. Of the Phi Beta Kappa graduates about 5.9 per cent achieved this kind of distinction. Looking at the statistics in another way, we see that about 15.7<sup>1</sup> per cent of the graduates were elected to Phi Beta Kappa, whereas about 29.3 per cent of the *Who's Who* men achieved this undergraduate distinction. If high rank in college has nothing to do with the kind of success in life that *Who's Who* recognizes, we should expect to find that only about 15.7 per cent of the men in *Who's Who* were elected to Phi Beta Kappa. But they surpassed this mathematically computed expectancy by nearly 100 per cent.

Furthermore, of the 13,705 living alumni of two of the larger New England colleges, 5.4 per cent of those who graduated in the first tenth are included in *Who's Who*; only 2.9 per cent of those who graduated in the second tenth; only 2.5 per cent of those who gradu-

<sup>1</sup> *Ibid.*

ated in the third tenth; and only 1.8 per cent of those who graduated in the fourth tenth. Making liberal allowances for the shortcomings of the measure of success here employed, and for the misleading use of averages, the whole study nevertheless corroborates the conclusion drawn from the other studies presented above. The grade of work an undergraduate does in the studies of his choice is one of the safest measures of the success he is likely to achieve in later life.

*The Electives of Honor Men and Others  
for Fifteen Years*

Table XV and Figures 2-7 embody the total records of the 4311 men who took their degrees at Harvard College from 1886 to 1900, with respect to certain important aspects of the Elective System. Men who did not complete three years of work at Harvard College are not included. These fifteen years are chosen for the study because in 1884-85, beginning with the Class of 1888, the Elective System was extended to the Freshman year. All the students for each year are divided into two groups, those who graduated with dis-

TABLE XV

## ELECTIVE SYSTEM AT HARVARD COLLEGE, CLASSES 1886 TO 1900

Number of students, 4311. Proportion of honor men and of other men showing certain tendencies in their election of studies

		1886	1887	1888	1889	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900
Represented graphically by	Graduates with distinction	105	115	90	83	110	102	112	103	131	131	146	138	126	146	137
	Without distinction	114	110	129	117	148	145	136	175	173	197	195	188	235	256	218
Figure 2	Men who took snap courses	11	11	14	13	24	16	29	15	19	18	22	18	21	44	25
	Without D	58	40	36	15	31	30	38	42	32	30	32	36	36	61	38
Figure 3	Men who took mainly elementary courses			11	2	15	10	27	28	24	31	25	30	34	33	40
	Without D			9	12	21	20	30	31	44	47	52	37	53	47	48
Figure 4	Men who dropped classics after first year	62	69	49	52	35	47	32	36	30	36	35	33	34	35	38
	Without D	62	60	50	55	41	44	33	42	27	24	25	42	34	31	32
Figure 5	Men who dropped classics first year			42	42	25	32	30	42	29	36	53	46	52	69	73
	Without D			40	41	26	17	37	41	49	46	58	61	67	70	75
Figure 6	Men who began to specialize in sophomore year	17	37	37	31	31	28	22	23	29	28	31	18	19	13	37
	Without D	10	21	15	16	16	17	12	13	21	25	19	18	17	10	21
Figure 7	Men who took mathematics	5	4	12	13	7	7	12	10	6	4	11	14	10	19	10
	Without D	3	5	2	1	3	2	2	4	3	3	15	10	12	20	13

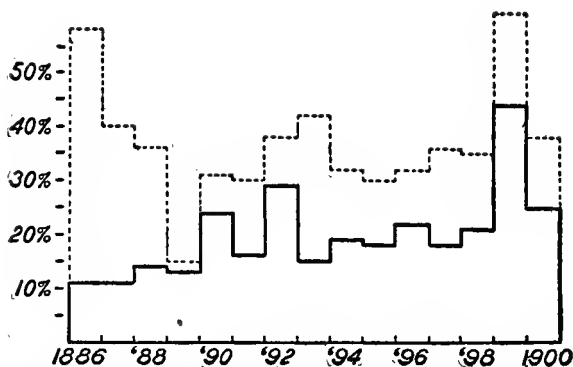


FIGURE 2. Showing per cent of students at Harvard College, classes 1886 to 1900, who took snap courses

Honor men = —————  
 Plain men = - - - - -

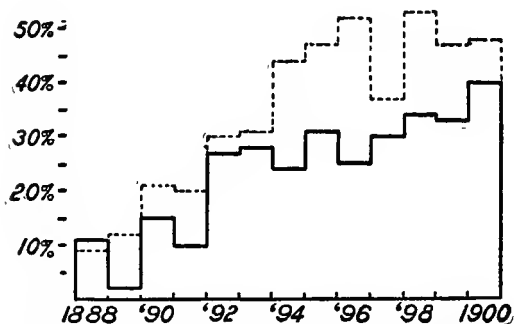


FIGURE 3. Showing per cent of men taking mainly elementary courses. (See Table XV.)

inction and those who graduated without distinction. In Figures 2-7 the heavy lines indicate the honor men and the dash lines indicate the other men. The figures picture the statistics of Table XV.

Figure 2 shows the relative extent to which the two groups sought snap courses. The courses selected for this purpose were those regarded as snaps by virtually all the students in college at the time. In every class, without exception, the plain degree men elected a larger proportion of their work from snap courses than did the honor men.

Figures 3 and 6 are further evidence in support of the contentions made earlier in this chapter regarding specialization and scattering of studies. The better students everywhere show marked tendencies to specialize; the poorer students show equally clear tendencies to scatter. Figure 3 shows that the men who graduate without distinction scatter their work among elementary courses conspicuously more than do the honor men. Figure 6 shows that the honor men begin to specialize in Sophomore year to a conspicuously greater extent than do the men who graduate without distinction.

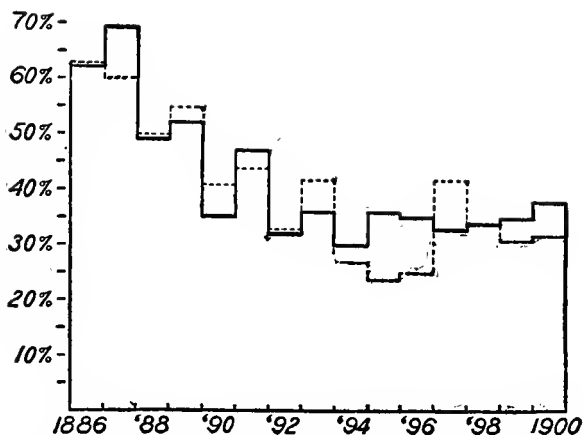


FIGURE 4. Showing per cent of students at Harvard College, classes 1886 to 1900, who dropt the classics after Freshman year. (See Table XIV.)

Honor men = —————  
Plain men = - - - - -

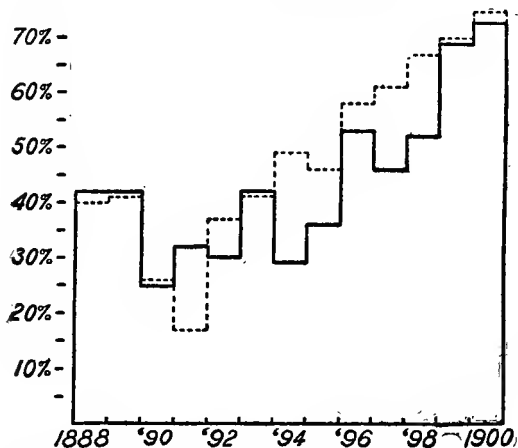


FIGURE 5. Showing per cent of students who dropt the classics on entering college. (See Table XV.)

Figure 5 does not reveal marked differences in the two groups with respect to the proportion of each group dropping classics in Freshman year. Such difference as there is, however, accords with the other statistics we have given. In nine classes out of thirteen, the honor men continued the classics in larger proportions than did the other men.

Figure 7 also accords with the other studies summarized in this chapter. It shows that the honor men elected a larger proportion of their courses from mathematics than did the poorer students.

*Relation between Success in College and  
Success in Professional Schools*

A valuable study by President Lowell includes all students for twenty years in the Harvard Law School and for sixteen years in the Harvard Medical School who took their undergraduate work in Harvard College. The extensive statistics secured through this investigation are summarized in Table XVI and shown graphically in Figure 8. The heavy lines in Figure 8 indicate the average number of courses (a course being three hours a week for



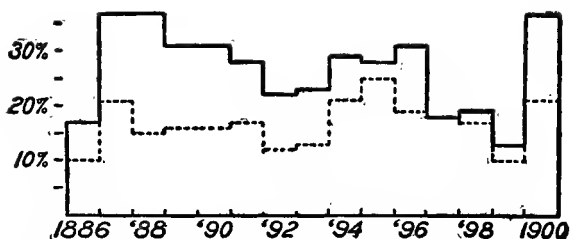


FIGURE 6. Showing per cent of students at Harvard College, classes 1886 to 1900, who showed marked specialization as early as Sophomore year.

Honor men = —————  
Plain men = - - - - -

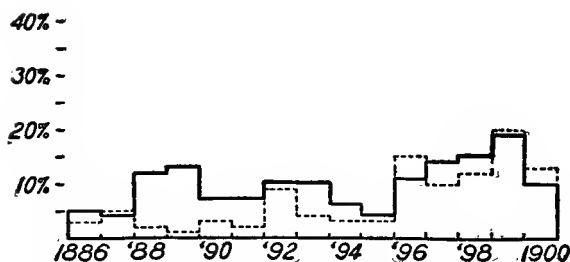


FIGURE 7. Showing per cent of students who specialized in mathematics. (See Table XV.)

one academic year) taken in each subject in Harvard College by the men who graduated *cum laude* from the Harvard Law School and from the Harvard Medical School. The dash lines indicate the same facts for the other men, — those who received degrees without distinction. Table XVI gives, for the lawyers and the doctors separately, the ratio in each subject of the amount of work taken by the honor men and the amount of work taken by the other men.

The most noteworthy feature of the chart is the closeness with which the dotted lines follow the heavy lines. This means that the honor men in the professional schools distributed their college courses among various departments in almost precisely the same way as the plain degree men. In other words, there is almost no correlation between the subjects taken in college and success in the study of law or medicine. The greatest differences are in Greek, mathematics and physics, in the order named ; but as the elections in these subjects were comparatively small — an average in each subject of less than half a course — it would be rash to conclude that success in professional

**TABLE XVI**  
**HARVARD LAW AND MEDICAL SCHOOLS**

	Ancient Languages				Modern Languages					Fine Arts and Music		
	Semitic	Greek	Latin		English	German	French	Italian	Spanish	Fine Arts	Music	Total
LAW SCHOOL												
Honor Men .		.59	.76		3.31	1.25	1.23	.09	.09	.54	.04	7.9
Other Men .	.01	.38	.70		3.30	1.35	1.43	.08	.17	.67	.05	8.24
Ratio . . .		1.55	1.08		1.0	.92	.86	1.12	.52	.80	.8	.95
MEDICAL SCHOOL												
Honor Men .	.02	.30	.45		2.77	1.95	1.72	.10	.07	.78	.04	8.43
Other Men .	.02	.19	.37	.006	2.79	1.74	1.46	.07	.23	1.23	.23	8.02
Ratio . . .	1.	1.57	1.21		.99	1.14	1.18	1.42	.30	.63	.17	1.5

TABLE XVI — Continued  
HARVARD LAW AND MEDICAL SCHOOLS

	Natural Sciences								History, Political and Social Sciences					Phil. and Math.				
	Physics	Chemistry	Astronomy	Engineering	Botany	Zoology	Geology	Mining	Total	History	Government	Economics	Education	Anthropology	Total	Philosophy	Mathematics	Total
LAW SCHOOL																		
Honor Men .	.25	.46	.03	.06	.05	.05	.33		1.27	3.97	1.25	2.20		.01	6.28	1.16	.74	1.9
Other Men .	.20	.48	.03	.09	.08	.09	.42		1.41	3.33	1.27	2.09	.02	.02	6.75	1.21	.51	1.76
Ratio . . .	1.25	.96	1.	.66	.62	.55	.78		.90	.92	1.	1.05		.5	.93	.95	1.45	1.08
MEDICAL SCHOOL																		
Honor Men .	.41	2.39	.04	.08	.58	1.23	.57	.02	5.35	1.83	.40	1.05	.006	.03	3.26	1.20	.45	1.65
Other Men .	.44	2.44	.05	.08	.60	1.55	.67	.04	6.18	1.96	.45	1.07	.91	.11	3.63	1.11	.34	1.47
Ratio . . .	.95	.98	.8	1.	.96	.79	.85	.5	.86	.93	.88	.98	.6	.27	.89	1.08	1.32	1.12

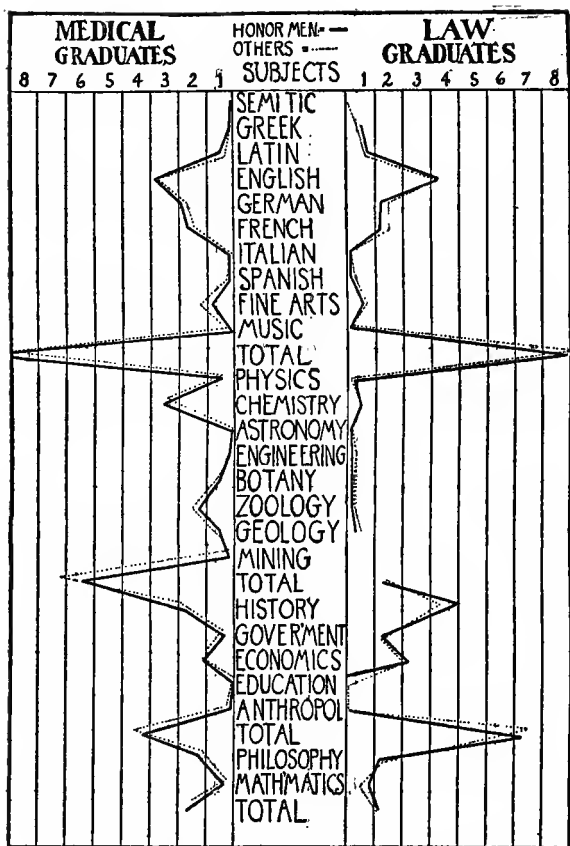


FIGURE 8. Showing average number of courses taken in each subject in Harvard College by the honor men for twenty years in the Harvard law and medical schools, compared with the same facts for other men. (See Figures 9 and 10.)

schools depended upon the pursuit of these subjects. Figures 9 and 10 represent the number of students electing six courses in each of the four groups: philosophy and mathematics, history and social and political sciences, natural sciences, language and literature. A glance at the two columns in Figure 9 shows that the honor men in the Law School concentrated in these four departments almost precisely as did the other men. Figure 10 shows the same fact for the Medical School. It appears to make little difference *what* subjects a student elects.

It makes a vast difference, on the other hand, what *grade of work* a student does in the subjects of his choice. Figures 9 and 10 show with what remarkable precision the high scholarship of men in college predicts their success in professional schools. The two columns in Figure 9 show the high chances a *summa cum laude* graduate has of achieving distinction in the Law School; the high chances (though somewhat lower) that a *magna cum laude* graduate has of distinction; the lower chances of a *cum laude* graduate, and the very rare chances of a man who graduates from college without

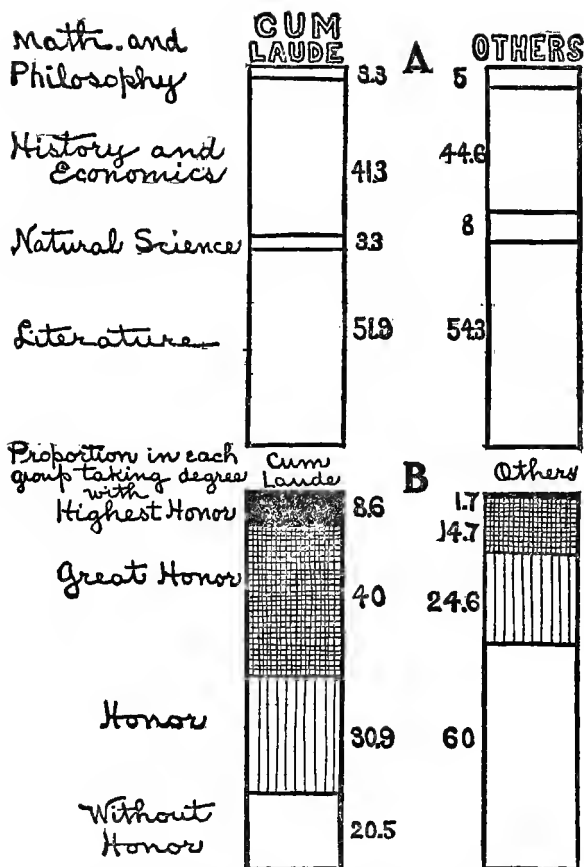


FIGURE 9. Showing (A) the relation between subjects studied in college and success in law school, and (B) the relation between scholarship standing in college and success in law school. (See Table XVI.)

distinction. Only one man in twelve years whose college record fell below C has contrived to change his habits sufficiently to graduate with honor from the Law School. The editors of the *Harvard Law Review*, who are chosen from the very top of each class, give further evidence of the close correlation between success in college studies and success in law studies. Omitting those who entered college in the Senior year, we find that only 2.5 per cent of those who graduated from college without distinction became editors of the *Law Review*. Six per cent of those who graduated *cum laude* ; 22 per cent of those who graduated *magna cum laude* ; and 28 per cent of those who graduated *summa cum laude* won places on the *Law Review*. Figure 10 shows that the same general truth holds for students in the Medical School. A comparison of Figures 9 and 10 would be misleading, however, as the Medical School awards its honors to about half of each class and the Law School to less than one-fifth.

These facts are quite at variance with popular opinion. Returns from several hundred Harvard undergraduates express the prevailing



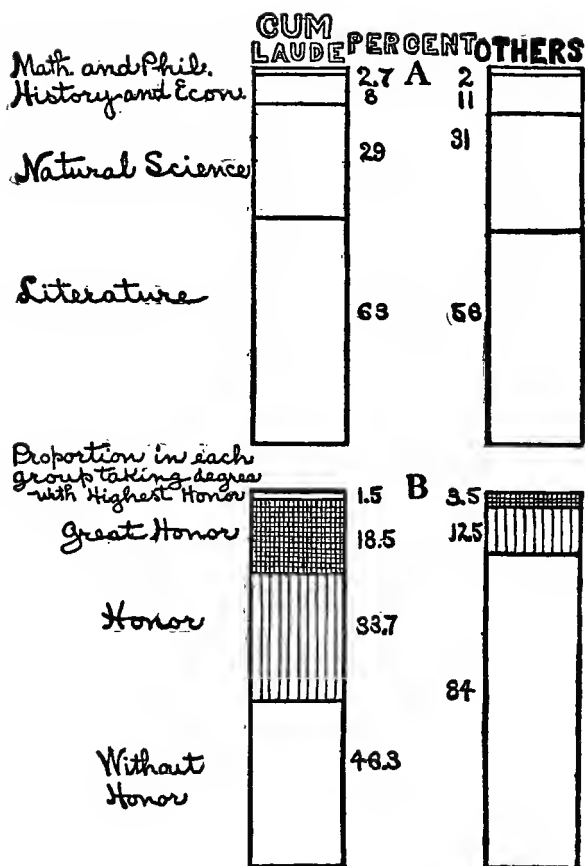


FIGURE 10. Showing (A) the relation between subjects studied in college and success in medical school, and (B) the relation between scholarship standing in college and success in medical school. (See Table XVI.)

idea that success in college scholarship furnishes little or no indication of those intellectual qualities that men desire to possess. "College life" is said to be the thing. The notion has spread that "sports" in college settle down in the professional schools and surpass the men who in college were "grinds." Pity is often expressed for the unfortunate salutatorians and valedictorians who are supposed to be doomed to failure in life. Such notions must now go the way of many others, though some men will still comfort their mediocre college work by exalting opinions above facts. There are still people who believe that the earth is flat.

## CHAPTER XII

### COUNTING QUALITY AS WELL AS QUANTITY FOR COLLEGE DEGREES

“THE saying that ‘C is a gentleman’s grade’ is evidently an imperfect defense for the idler in Harvard College.” So says a report of President Eliot. Imperfect, indeed, any defense of the idler must be, no matter how much delight we find in Stevenson’s *Apology* and in other essays on profitable idleness. The way of the idler takes him along a byroad, to be sure, “very even and pleasant, which is called Commonplace Lane”; but even the dull discernment of the idler will hardly permit him long to believe that the lane is “not much frequented.” Indeed, the Dean of Harvard College, in commenting on the students summoned to his office for unsatisfactory records, declared that the replies to the question, “Do you work on an average seven hours a day?” might all be summed up in the answer of a single freshman, “No; nobody I know of

works seven hours a day." And a senior added, "I am sorry that he said it, but I think he told the truth about us." Many a college boy insists that he is "working hard" if he devotes four or five hours a day to his studies. Such a one is likely to be well satisfied with the grade of C. If by any chance he meets a B in Commonplace Lane, he is straightway prompted to recline on a mossy bank in a lapse of unusual idleness until another summons from the office bids him move on. If he is greeted by an A — but such things never happen in any well-regulated college.

The grade C stands for Commonplace Lane, no doubt; and, by a kind of majority vote, it stands also for "the gentleman's grade." All students like to be considered gentlemen, and a majority would attain no such distinction if the demands of scholarship were higher. To this the Rank List bears annual witness. Although inferences concerning standards of scholarship, drawn from such data, are wholly unreliable, because of our unscientific distribution of undefined grades,<sup>1</sup> yet on one point

<sup>1</sup> This matter is discussed at length in Chapter XIII below.

there is no doubt, — college men need stronger incentives to study.

How to stimulate the great body of students to harder study and higher scholarship — that problem demands all that a college faculty has of patience and judgment. What incentives are now offered? There are money scholarships granted on the basis of rank, distributed on the patently false assumption that an A is equal to an A in whatever course attained, and awarded to a small proportion of students, many of whom need no such incentive. There are honorary scholarships, without stipend, awarded for the most part to students who love their work and ask no other compensation than the satisfaction of doing it well. Then there is the hope of graduating in three years. This can be accomplished by doing passable work — merely mediocre work — in five or six courses a year, but it cannot be accomplished by doing the very highest grade of work in four and a half courses a year. The possibility of graduating in three years, therefore, is not primarily an incentive to high scholarship. Indeed, it tends rather to superficiality than to intensive work; it invites ambitious students to spread

themselves out thinly over a large field rather than to concentrate on the number of courses they can do thoroughly. Those students who desire and confidently expect to graduate in three years naturally stand higher in rank than those who are content to spend four years; the difference lies in the students themselves, not in any incentive to higher scholarship offered by the three-year plan. A student may receive the A. B. degree for completing seventeen and a half courses with grade of A ; for completing the same number of courses with "the gentleman's grade" he may receive precisely the same degree. Surely it is a gentleman's degree; shall we call him to account, for deeming C a gentleman's grade? Or shall we admit the need of some further, definite incentive to high scholarship?

### *The Credit-for-Quality Plan*

A fair and potent plan is, in essence, to count quality as well as quantity toward the A. B. degree; in other words, to recognize in the requirements for graduation the unquestionable fact, the unpleasantly obvious fact, that a course of study completed by one stu-

dent with a low grade means considerably less work accomplished than the same course completed by another student with high grade. Most college instructors are forced to observe the material difference in achievement usually represented even by the grades B and C, and of the greater difference between the grades A and D. Yet, with trifling exceptions, the man who attains grade A for highly commendable and extensive work gets no more credit toward graduation than the man who scrapes through on the gentleman's grade.

In the laboratory, work done is always computed as the product of two factors, a quantity factor and an intensity factor. Just as mechanical work is the product of force and distance, so mental work in college may be estimated as the product of amount and quality; that is, of the number of courses and of the grades attained. This analogy, though not perfect, suggests a pertinent question. In determining the fitness of a candidate, why not count quality as a definite and considerable factor?

This principle has long been applied in conferring the degrees of A. M. and Ph. D. Among

the institutions which in the catalog go for universities, there are still many in which the higher degrees stand merely for a fixed term of residence or a fixed number of courses pursued without dishonor. But the better institutions demand quality in graduate work. Columbia University and the University of North Dakota, and a few others inadvertently, recognize the principle in the undergraduate departments, thus shifting the emphasis from years of residence to work done.

Harvard, also, shows clear appreciation of the principle involved by excusing all students who attain grade C or higher in freshman English from the half-course in English composition prescribed for all other students. Accordingly, a man who attains C in freshman English needs only seventeen courses for his degree; a man who attains only D must take seventeen and a half courses. In other words, a mere "pass mark" gives the course a valuation of one; a higher mark raises the value of the course to one and a half. If the principle is sound as applied to courses in English, why is it not sound applied to other departments? Indeed, the Harvard faculty once affirmed,



provisionally, the principle that "a man whose work is of high grade should not be required to take so many courses as a man whose work is of low grade."

The concrete plans that may be devised in accord with this principle are innumerable. The first one was proposed by President Hyde of Bowdoin College. The exact values assigned to the various grades are not of vital importance, for instructors will naturally employ the grades with some regard to their fixed relative values. Here is a possible plan. Suppose we require 140 points for the degree, and give the following values to each grade:  $A=10$ ,  $B=8\frac{1}{2}$ ,  $C=7$ ,  $D=6$ ,  $E=0$ . Then a student could graduate with 14 A's, or 20 C's, or  $5\frac{1}{2}$  A's and 10 B's; but no student should receive credit for more than one D in any one year. The submerged tenth in the college group, the confirmed idlers without apology, should not be allowed to worry a degree out of an institution by protracted residence. With credit for quality, a student doing excellent work in five courses a year could take his degree in three years, whereas a student doing no better work than the "gentleman's average" would need

five courses a year for four years. There would be almost as many combinations as there were students. One man might make up the 140 points with 2 A's, 6 B's, 9 C's, and 1 D, while another offered 10 A's, 4 B's, and 1 D. To be sure, some students might find themselves credited with more than the required number of points, but the extra credit would do them no harm.

### *Objections to the Credit-for-Quality Plan*

The plan itself is based on common sense and justice; some objections are not. To urge that any such plan would complicate the records of the registrar is to imply that an institution should be adapted to its bookkeeping rather than the bookkeeping to the institution. Moreover, it is not true that the estimating of credits under this plan would be extensive work. A test has shown that it could be completed for Harvard College by one man in one day.

As another objection, it is urged that this plan would lead men to work for grades rather than for more worthy ends. But how, with regard for common sense, can we set up a mark

of honorable achievement and then find fault with a student who strives for it? If a high grade means what it is supposed to mean, — though students believe it does not,<sup>1</sup> — students fired with the ambition to attain it would necessarily do better work, which is one of the main objects of the plan. Furthermore, if this objection is valid, it condemns as well the almost universal practice of awarding scholarships, prizes, commencement parts, Phi Beta Kappa, and other academic appointments on the basis of rank.

Small colleges, while emphasizing the educational advantages of their size, will object to the plan for fear that it will make them still smaller. If the better students are thus enabled to graduate in three years, the senior class will dwindle, as it has dwindled at Harvard. Thus there will be a loss of students and of fees. But the small colleges should welcome any plan which will enable them to send their best men one year earlier to professional schools and to business without cheapening the degree.

<sup>1</sup> This was the testimony received from several hundred students by the Harvard committee appointed to consider how tests for rank in college may be made a more generally recognized measure of intellectual power. 1909.

For the small colleges now suffer in competition with universities which provide opportunities for combining the last year of college with the first year of professional school, thus "saving a year," according to the common, deceptive phrase. Although such a device never contrived to lengthen a man's life, it does offer a valued option on one year of that life: he may devote it to further study in college or, later on, to the practice of his profession.

Such an option is a real advantage. There is a widespread belief that to-day the student's active participation in the work of the world is too long delayed. The trend of education indicates that four years is to be the maximum instead of the minimum college course. The plan of combination with the professional schools will lower the age of graduation by one year for students who enter the graduate schools of their own college and for colleges which have such schools; but for other students and for other colleges, it is no plan at all. What shall the small colleges do, then, to offset this university advantage without cheapening their degrees? What shall they do

to send their best men sooner to professional study, to shorten the period of dependence on parents, and to make marriage possible at an earlier age?

In answer to these questions, three plans are proposed. One is to reduce slightly the number of required courses and raise the entrance examinations proportionately. This, apparently, has been one phase of the policy at Harvard. But any one who proposes such an answer to the age difficulty we are now considering is merely toying with the real problem. Whatever may be the good effects of the plan, it is probable that even the student who refuses to elect mathematics will discover, before he emerges finally into that dim future beyond commencement, that if two and two make four, three and one make four as well.

Another plan, widely advocated and little used, is to reduce the college course for all students to three years. But this would make the degrees of the small college suffer still more in comparison with the degrees of the university. Here is the dilemma: if the course is to be reduced, the small colleges cannot safely take the lead; if, on the other hand,

the universities take the lead, the small colleges, in following, would be relatively no better off as regards the age difficulty. In these two suggestions, therefore, the small colleges find no means of offsetting the university advantages for combining the last year of college with the first year of professional school.

### *Advantages of the Credit-for-Quality Plan*

The quality plan is superior to both of these. It does not merely shift the burden on the secondary schools; it involves no added burden on parents; it does not prompt a student to attempt more courses than he can do well; it does not allow the same courses to count for two degrees for the same student; it does not cheapen the degree. It does break the lockstep; it does put a substantial premium on high scholarship. The student who is wandering leisurely in Commonplace Lane can no longer tell you that a C is as good as any other grade. If he does better work in each course, he will be enabled to enter his professional study, become independent, and marry at an earlier age. All this—and here is the

crucial point—without cheapening the degree; for the students who keep down the level of scholarship under the present valuation of courses, the “quantity plan,” would, under the “quality plan,” need a new apology for idlers. They would find it a little more difficult to “get through college” with a degree, and a little easier to “get through” without a degree. Indeed, the shirks and the unfit would find the demands increasingly great, owing to the extra stimulus to good work throughout the college of this definite and just reward. There would soon be needed a new definition of “the gentleman’s grade.”

There are objections to this practice, as we shall see presently, but the objections are not bound up in the credit-for-quality plan. The real difficulty is that the same grade, as assigned by various instructors even in the same institution, has various values. In nearly every college this is notoriously true. Not even the assurances of the faculty that there are no snap courses prevent students from finding courses which they regard as such.

*The Defect in the North Dakota Plan*

The chief difficulty at the University of North Dakota, which gave up some features of the plan after a six years' trial,<sup>1</sup> appears to have been the failure to safeguard the credit-for-quality principle by a scientific administration of the marking system. The man who condemned the North Dakota plan as demoralizing to both students and teachers, because teachers offering elective courses are constantly under great temptation to give too many high marks, and the students are shrewd enough to know it, missed the whole point in his petty arraignment of his colleague.<sup>2</sup> It

<sup>1</sup> University of North Dakota, Catalog, 1908-09, p. 28.

<sup>2</sup> Ladd, A. J., "An Experiment in Credit for Quality," *Western Journal of Education*, 20:13. By the new plan at North Dakota, which is similar to the Chicago plan, every student in order to graduate must gain a number of "honor points," the number in each case being the same as the number of semester hours required for the degree; *i. e.*, in the college of arts 125, in the college of engineering 136, etc. These honor points are secured as follows: Every A carries three honor points per semester hour; every B two; every C one, and D none. Thus in a four-hour course, A would bring 12 honor points; B, 8; and C, 4. It is evident, too, that in order to secure the proper number of these "points," a student's marks must henceforth average at least C through-



reminds one of the omnipresent argument against the Elective System—that students, free to choose for themselves, are sure to take snap courses, as though the fault were with the elective principle rather than with the administration which offers year by year courses

out his course. There will be no possibility of reducing the time of residence by securing extra credits ; but those averaging B are to be allowed to take eighteen hours a semester if they wish.

Concerning this matter, Professor E. F. Chandler, the statistician of the University, said in a letter, December 18, 1910 :

“The chief objection to our former system was the fact that the average college professor is really an ‘easy mark,’ or at least some are so. I insist that, to illustrate by per cents, a student who receives 98 per cent justly deserves twice or thrice the credit received by the 71 per cent student, and not merely the 1.3 times as much that we formerly gave him. But it was not practicable; some teachers, in the unconscious effort to be well thought of, or to have their work elected by the students who are pleasant to work with (that is, the upper half of the class), or else in response to the implied or silent entreaties of those members of the classes who were fairly good (though not excellent) and who needed the extra credits received from B standings in order to make the course in the desired shortened time, gave to an absurdly large number of their students the ‘surplus credit’ marks of A or B. So that not only the really excellent or superior students, but *all* except the inferior students, were succeeding in getting credits by this short-cut route toward a diploma.”

which it regards as too easy. This opponent of the North Dakota plan overlooks the central issue. He dismisses the judgment of Professor Kelley—that the absence of thoroughly satisfactory results at their university may be due less to faults inherent in the plan itself, than to faults in its administration—with the assertion that even so “the real situation would not be changed, since the system and its administration cannot be separated.” This is his opinion. Yet he presents in the same article a table of distribution of 15,520 “extra-credit grades” given by thirty-two members of the faculty of the University of North Dakota, showing variations from 20 per cent to 77 per cent. So far from uniform is the practice of these men that the broad mode 31 per cent to 50 per cent leaves out over half of the cases. If this kind of an administration of the marking system is, in his opinion, inseparable from the credit-for-quality plan, he ought to oppose the plan. But other opinions are permissible,—as our evidence will show.

The diversity in the value of grades is an evil under the present “quantity plan.” The

fixing of a definite rating for each grade would *tend* to establish in each institution a uniform standard, thus making the apparent objection to the "quality plan" a real advantage. Statistics for the past six years even at the University of North Dakota clearly show this tendency. It must be admitted, however, that no satisfactory administration of the curriculum on a credit-for-quality basis will be possible until provision is made for the distribution of college grades, by the several instructors, on a scientific rather than a personal basis. The possibility of a scientific distribution of grades is therefore the subject of our next inquiry.

## CHAPTER XIII

### THE NEED OF A SCIENTIFIC DISTRIBUTION OF COLLEGE CREDITS

COLLEGE honors are everywhere awarded on the naïve assumption that grades in college courses are distributed on a scientific basis. For many important administrative purposes we assume that an A in one course is equivalent to an A in another course; that the 80 per cent of one instructor indicates an achievement equal to the 80 per cent of another instructor. Accordingly we estimate the fitness of candidates for admission, determine eligibility for athletics, assign annually hundreds of thousands of dollars in scholarships and fellowships, award Commencement honors, elect men to Phi Beta Kappa, and confer degrees wholly, or in large part, on the evidence secured by merely counting the number of A's, the number of B's, and so forth, that each student has to his credit. The question is pertinent to what extent our assumption of the

equivalency of grades is warranted by the facts.

Our universities and colleges vary so little in this phase of the administration of the curriculum that the detailed distribution of the grades of a few institutions for a few years will fairly represent the practice, except in two or three universities, throughout the country. The grades A, B, C, D usually represent degrees of excellence between 100 per cent and 60 per cent of some undefined thing, and are all pass marks. The grade E commonly indicates failure. In Figures 11 to 20 the grades have these meanings. The per cent of the students in each subject who receive each grade is graphically shown, so that a glance reveals the central tendency for each grade in each institution and the extreme deviations in both directions. In all cases the names of instructors and the exact designations of the courses are omitted, at the request of the several institutions concerned; though one may be pardoned the query what objections could there be to publicity if grades were distributed on a defensible basis.

Figures 11 and 12 and Table XVII show

## TABLE XVII

HARVARD COLLEGE, 1903-05

*Distribution of 8969 Grades. Elementary Courses*

GROUP I	A %	B %	C %	D %	E %	Abs. %	TOTAL
Astronomy	16 10	13 17	45 48	19 17	6 7	1 2	69 150
Botany	11 4	28 32	38 44	14 13	2 1	7 6	183 219
Chemistry	6 8	26 19	45 45	12 17	9 11	2 0	334 319
Economics	10 7	18 19	37 43	25 21	7 7	3 3	531 436
Engineering	11	15	31	28	12	3	114 121
Engineering	10	13	27	21	21	9	189 129
English	1 1	13 11	52 51	28 32	3 3	3 3	603 564
Fine Arts	2 6	33 27	45 67	10 0	2 0	9 0	58 49
French	11 12	25 19	35 36	21 19	4 10	4 4	156 145
Geology	5 5	26 25	45 33	20 28	3 2	2 7	489 85
Geology	2 4	28 20	48 43	10 24	7 7	5 2	122 108
German	7 6	21 14	31 32	26 27	11 17	4 2	259 293
Government	6 9	16 23	39 37	28 21	8 7	3 2	356 419
Greek	35 15	28 36	21 34	13 7	1 5	3 3	72 61
History	7 7	20 24	44 42	21 20	5 6	2 2	347 380
Hygiene	18 8	29 23	33 48	18 14	1 4	0 3	87 139
Latin	17 15	25 27	41 41	10 5	7 10	0 2	143 128
Mathematics	18 14	24 22	18 31	31 23	11 11	0 0	85 95
Philosophy	7 7	31 23	41 61	15 8	2 0	5 1	229 215
Spanish	10 7	24 13	43 38	16 33	4 8	3 2	106 119
Zoölogy	2	13	48	30	5	1	149 184
Average	7	20	42	21	7	3	213

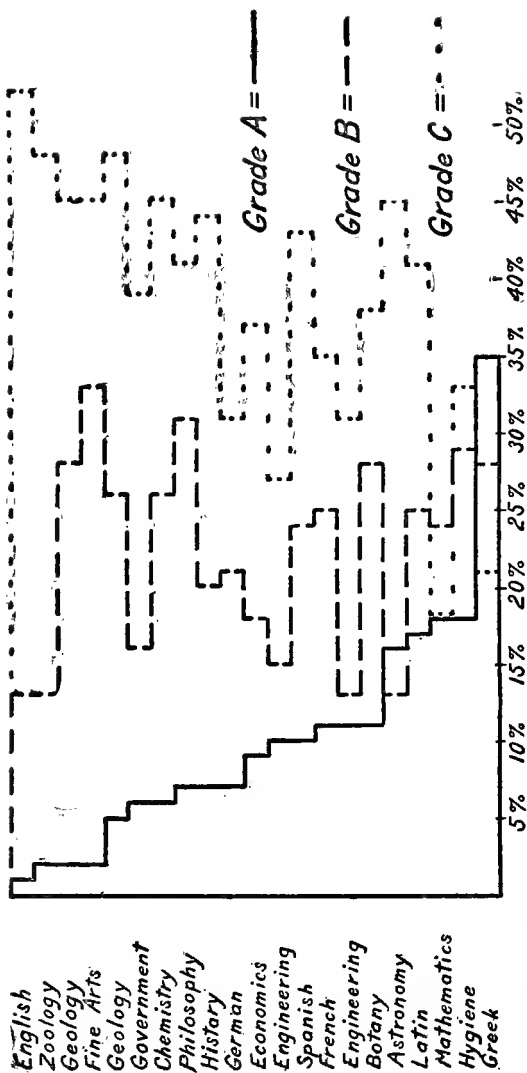


FIGURE 11. Showing the distribution of the Grades A, B, and C, in the largest elementary courses in Harvard College, 1903-1904. (See Table XVII.)

the proportion each grade is of the whole number given at Harvard College in each of the elementary courses in twenty-one subjects during one academic year. Thus, the range of the highest credit (A) is from one per cent in English to thirty-five per cent in Greek. The range of grade B is from eleven per cent in English, zoölogy, engineering and astronomy to thirty-three per cent in fine arts. Grade C shows a minimum of eighteen per cent in mathematics and a maximum of fifty-two per cent in English. Grade D ranges from ten to thirty-one; grade E, from one to twenty-one. Still wider ranges for each grade are shown in Table XXI, which presents the distribution and enrolment in each course for two years. Courses with fewer than one hundred students are omitted, as the smaller courses are not fairly comparable in a single year with the larger ones on a percentage basis.

Still further to safeguard our comparisons, the intermediate and advanced courses are grouped by themselves. Some men believe that the credits in an advanced course, which to some extent represents the survival of the fittest students in the department, should be



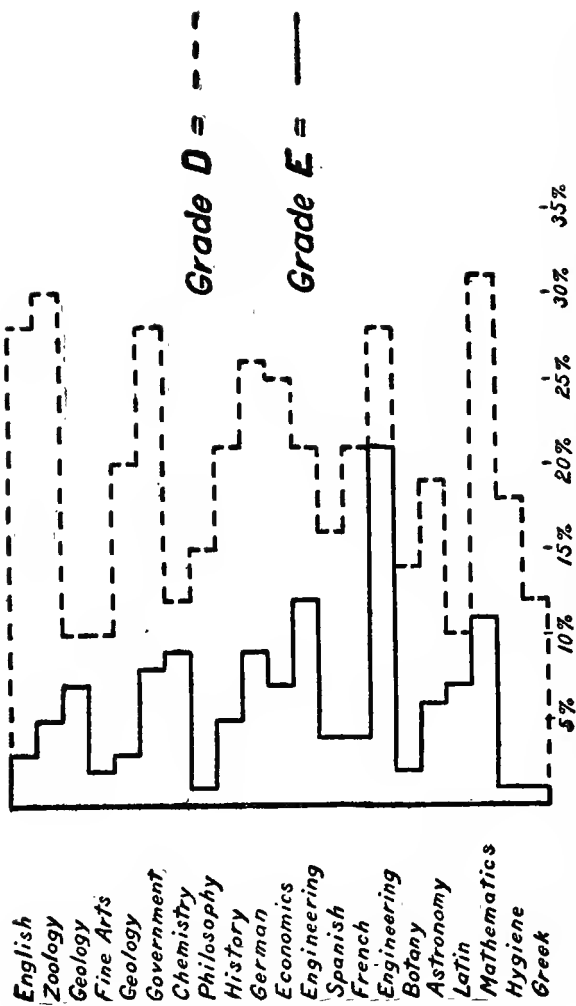


FIGURE 12. Showing the distribution of the Grades D and E in the elementary courses included in Figure 11, for Harvard College, 1903-1904. (See Table XVII.)

differently distributed from the credits in an elementary course in the same subject. College records everywhere show that a larger proportion of the high rank men than of the low rank men in an introductory course, continue the subject in advanced courses. Indeed, one of the chief objects of the Elective System is to enable students to specialize in fields in which they are likely to achieve distinction. But this hardly justifies the extreme and continued variations among the grade distributions of the intermediate group of courses, nor does it account in a satisfactory way for the diverse practices among advanced courses. Figures 13 and 14 show a variation of two per cent to sixty per cent in the A's given in intermediate courses in Harvard College; and extremes of seventeen per cent and seventy-four per cent in the case of grade B. Figure 14 pictures the statistics of grades C, D, and E, which are given in Table XVIII. In like manner Table XIX presents the facts for advanced courses, though the enrolment is so small in certain courses as to make the percentages insignificant and the averages misleading. Furthermore, the proportion of graduate students in

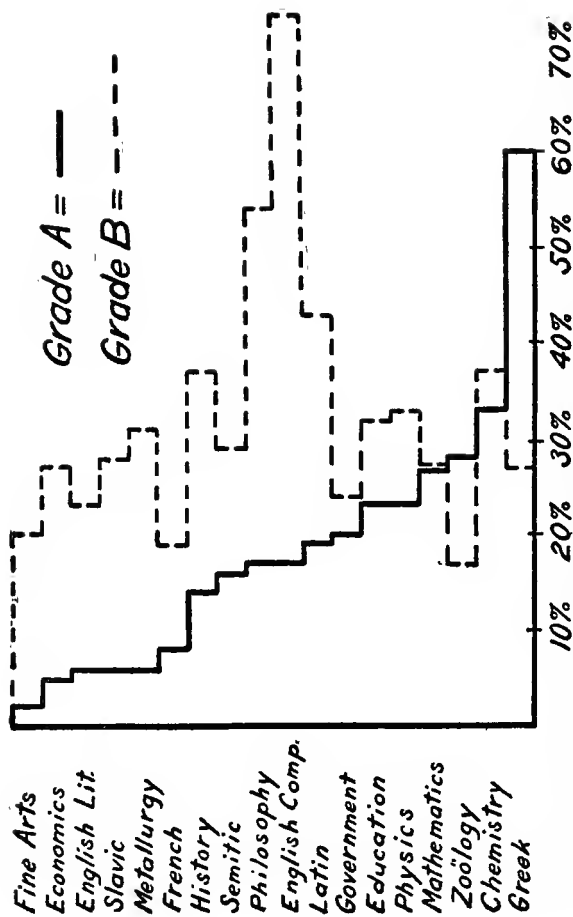


FIGURE 13. Showing the distribution of the Grades A and B for the courses in group II (Intermediate) in Harvard College, 1904-1905. (See Table XVIII.)

## TABLE XVIII

HARVARD COLLEGE, 1903-05

*Distribution of 2456 Grades. Intermediate Courses*

GROUP II	A %	B %	C %	D %	E %	Abs. %	TOTAL
Chemistry	{ 16 33	42 37	29 27	8 3	0 0	5 0	38 30
Economics	{ 8 5	33 27	41 40	7 22	4 5	6 1	97 128
Economics	{ 12 4	23 23	34 45	14 10	7 5	10 13	169 191
Education	{ 7 23	46 32	31 30	7 7	0 5	7 5	54 44
English	{ 4 6	22 23	26 36	34 26	9 3	6 5	116 115
English	{ 24 17	50 74	24 7	2 2	0 0	0 0	50 42
Fine Arts	{ 7 2	19 20	55 43	14 23	4 7	0 6	98 259
Fine Arts	{ 11 8	39 19	39 46	8 19	3 0	0 8	38 26
French	{ 24 20	37 24	24 36	4 4	0 0	12 12	51 50
Government	{ 67 60	33 27	0 7	0 0	0 0	0 7	15 15
Greek	{ 5 13	24 31	57 41	8 3	3 0	4 11	118 61
Greek	{ 14 50	37 22	26 22	11 0	0 0	11 6	35 18
History	{ 19 15	43 32	24 42	5 7	0 0	10 4	21 88
Latin	{ 36 27	14 27	21 18	7 18	0 9	21 0	14 22
Mathematics	{ 14 6	26 31	32 38	14 16	6 0	7 9	69 32
Metallurgy	{ 45 17	18 54	18 11	0 3	0 0	18 14	11 35
Philosophy	{ 20 23	23 33	37 27	17 17	3 0	0 0	30 30
Physics	{ 20 18	20 29	39 41	12 6	5 6	5 0	41 34
Semitic	{ 17 6	27 28	46 48	0 9	3 5	7 5	59 65
Slavic	{ 14 28	31 17	38 39	14 11	0 0	3 6	29 18
Zoölogy	{ 12 28	28 37	37 13	4 4	6 6	6 6	61 61
Average	12	28	37	13	4	6	61

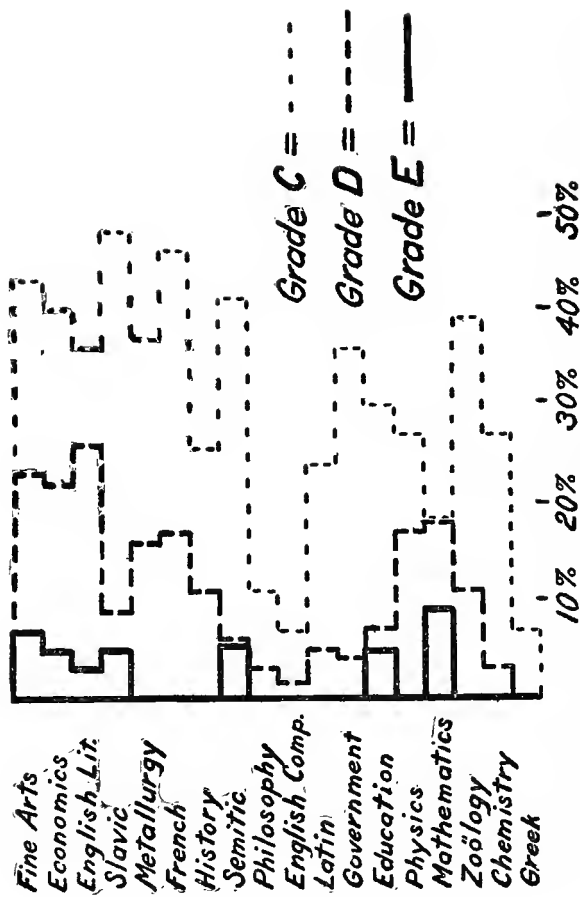


FIGURE 14. Showing the distribution of Grades C, D, and E for the courses shown in Figure 13, for Harvard College, 1904-1905. (See Table XVIII.)

## TABLE XIX

HARVARD COLLEGE, 1903-05

*Distribution of 476 Grades. Advanced Courses*

GROUP III	A %	B %	C %	D %	E %	Abs. %	TOTAL
Chemistry	{ 32 29	36 29	23 35	0 6	9 0	0 0	22 17
Classical Phil.	{ 33 60	50 30	17 0	0 0	0 0	0 10	6 10
Classical Phil.	71	29	0	0	0	0	7
Classical Phil.	58	0	0	0	0	42	12
Economics	80	0	20	0	0	0	5
Economics	100	0	0	0	0	0	3
Education	{ 33 48	50 15	3 26	3 0	5 0	8 11	40 27
English	{ 29 12	26 56	26 26	6 2	3 5	10 0	31 43
Fine Arts	{ 60 0	20 100	0 0	0 0	0 0	20 0	5 4
French	40	40	0	0	0	10	5
French	20	0	0	0	0	80	5
Geology	17	17	33	33	0	0	6
Geology	25	25	25	0	0	25	4
German	16	42	5	5	5	26	19
German	38	25	13	0	0	25	8
History	50	33	0	0	8	8	12
History	29	57	14	0	0	0	7
Government	31	35	12	4	0	18	26
Mathematics	{ 33 36	17 18	0 27	0 18	0 0	50 0	6 11
Mathematics	40	0	40	0	0	20	5
Mathematics	40	60	0	0	0	0	5
Music	{ 17 50	50 50	33 0	0 0	0 0	0 0	6 6
Philosophy	{ 30 42	70 58	0 0	0 0	0 0	0 0	20 12
Philosophy	{ 33 53	67 35	0 12	0 0	0 0	0 0	21 17
Physics	{ 33 13	33 63	22 13	0 0	11 13	0 0	9 8
Zoölogy	{ 92 87	8 7	0 0	0 0	0 0	0 7	13 15
Average	36	38	13	2	2	10	13

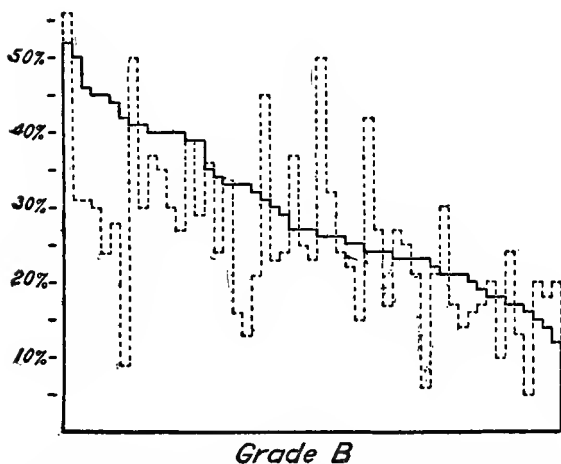
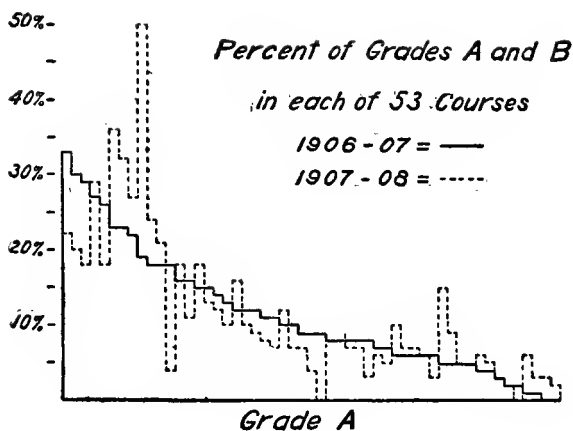


FIGURE 15. Showing how the Grades A and B at Harvard College vary in different courses for the same year, and in the same courses for different years. (See Table XXI.)

each course is not shown. Finally, Table XX indicates the comparative distribution of grades A-E for the three groups, — elementary, intermediate and advanced.

TABLE XX

(See Figure 21)

## HARVARD COLLEGE

*Distribution of all grades for two academic years. A summary of Tables XVII, XVIII, and XIX*

Totals	A %	B %	C %	D %	E %	No. of Grades
Group I	7	20	42	21	7	8969
Group II	12	28	37	13	4	2456
Group III	36	38	13	2	2	476

Not only are there extreme variations among different courses, but there are variations in the same courses from year to year that cannot be accounted for, apparently, by any of our scientific studies in the distribution of abilities among human beings. Figure 15 shows the per cent of A's and the per cent of B's given in each of 53 courses at Harvard College for 1906-07 contrasted with the same data concerning the same courses for the following year. The data are given in Table XXI. They are taken from the published Rank Lists and



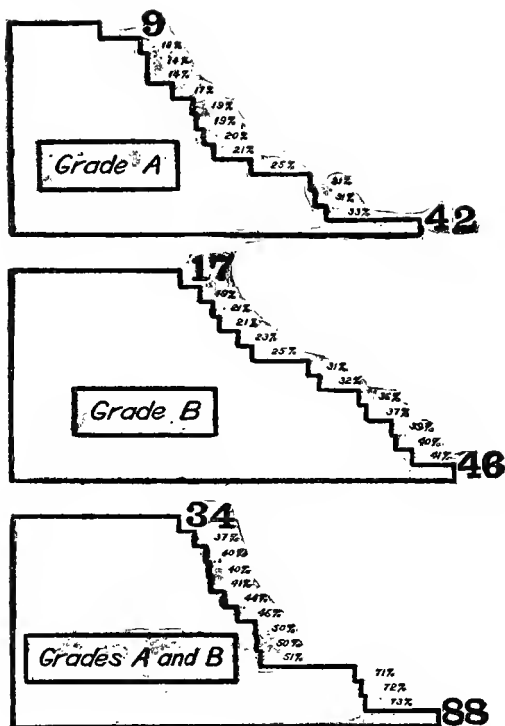


FIGURE 16. Distribution of Grade A, of Grade B, and of Grades A and B, at Bowdoin College by each instructor giving over 100 grades in 1907-1908.

from the enrolment in courses as given annually in the president's reports. A glance at the graphs in Figure 15 reveals the fact that eight or ten courses show marked changes from one year to the next, whereas in eighty to ninety per cent of the courses there are only negligible variations.

TABLE XXI

HARVARD COLLEGE

*Per cent of A's and B's in each of 53 Courses. 1906-1908.*

No.	Grade A %		Grade B %		No.	Grade A %		Grade B %	
	'06-'07	'07-'08	'06-'07	'07-'08		'06-'07	'07-'08	'06-'07	'07-'08
1	0	2	12	20	28	9	7	27	25
2	0	3	14	18	29	10	7	27	37
3	1	3	15	20	30	10	21	29	24
4	1	6	16	5	31	11	8	30	23
5	2	0	17	24	32	11	7	31	45
6	2	2	17	13	33	12	9	32	21
7	3	3	18	10	34	12	10	33	16
8	4	6	18	20	35	12	16	33	13
9	4	5	19	17	36	13	10	33	34
10	5	5	20	16	37	14	12	34	24
11	5	5	21	14	38	15	13	35	36
12	5	9	21	17	39	15	18	39	29
13	5	15	21	30	40	16	18	39	39
14	6	7	22	21	41	16	11	40	35
15	6	10	23	6	42	18	24	40	27
16	6	7	23	25	43	18	4	40	37
17	6	6	23	27	44	18	21	40	30
18	6	3	23	21	45	19	50	41	50
19	7	6	24	42	46	22	27	41	30
20	7	5	24	27	47	23	32	42	9
21	8	17	24	17	48	23	36	44	28
22	8	3	25	15	49	26	18	45	24
23	8	7	25	22	50	27	29	45	30
24	8	7	26	50	51	29	18	46	31
25	8	10	26	24	52	30	20	50	31
26	9	0	26	32	53	33	22	52	56
27	9	4	27	23					

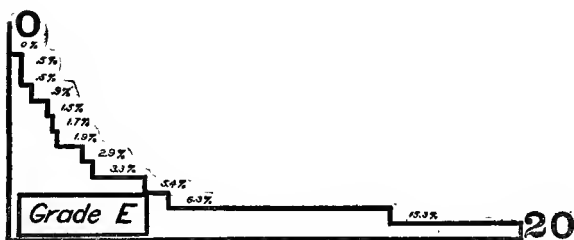
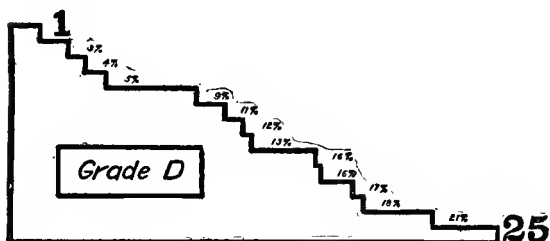
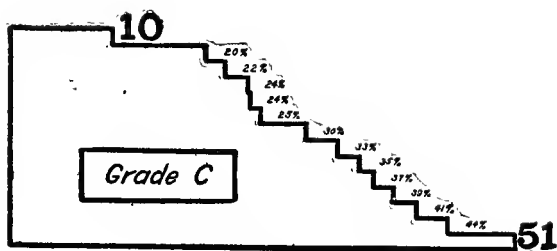


FIGURE 17. Distribution of Grades C, D, and E at Bowdoin College in 1907-1908 by each instructor giving over 100 grades. (Figures 16 and 17 are merged in Figure 20.)

Another fact revealed in Figure 15 is worth noting here. The six courses reaching highest in the A group are as follows: courses in Greek, Greek, Italian, Greek, Greek, Latin. The exact designations are withheld because of the respect of the administration for the feelings of individual instructors. Nevertheless students are encouraged to examine the published Rank Lists, in which he who runs for high grades may read his chances. Reference to Figure 11 shows that in 1903-04 as well, Greek far surpassed all other subjects in awarding high marks.<sup>1</sup>

Figures 16 and 17 show the range of percentages for each grade, A-E, for each instructor in Bowdoin College, Maine, giving in 1907-08 over one hundred grades. Figure 18 gives the distribution of highest grades and of lowest grades—the honors and the failures—for various departments at the University of California in December, 1906. It is unnecessary to present statistics for other years or for other institutions. From Maine to California the administration of college credits,

<sup>1</sup> The question is pertinent whether the facts presented on pages 213-215 above can explain the facts here presented.

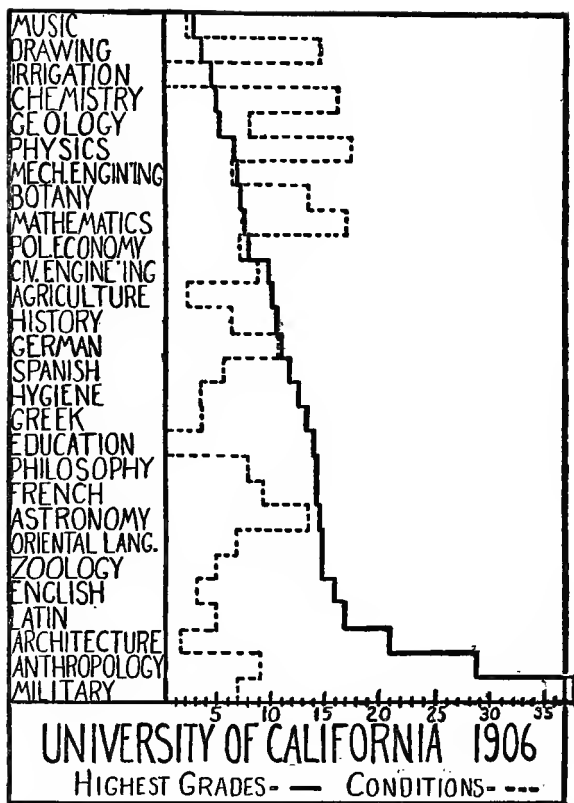


FIGURE 18. University of California. Distribution of first grades and of conditions in 1906, showing the proportion of highest and of lowest grades given by each department having over 50 students.

though alike in no other particular, agrees in this—that its basis is personal rather than scientific.<sup>1</sup> We do not know what the symbols mean: they have no defined meaning. To reply that a given symbol signifies a certain per

<sup>1</sup> Max Meyer, in *Science*, N. S. vol. xxviii, No. 712, pp. 243–250, presents a table of distribution of grades for the University of Missouri. This table shows, at one extreme, courses in which *all* the students of medium ability received the grades A and B; at the other extreme, a course in which *no* student of medium ability received A or B.

J. McKeen Cattell, in *Popular Science Monthly*, 66: 367, presents various distributions of grades assigned in Columbia College, and F. W. Johnson, in *School Review*, 19: 1, gives a good study of high school grades.

Clark Wissler, in a monograph supplement to the *Psychological Review*, No. 16, shows a marked correlation in the standing of pupils in various subjects.

Edward L. Thorndike, in *Educational Psychology*, The Science Press, 1903, chapter iv, deals with the relationships between grades assigned in various school subjects.

W. F. Dearborn, in Bulletin 368 of the University of Wisconsin, presents numerous unscientific distributions of grades in Wisconsin.

We have here used the statistics of institutions which do not attempt to grade students in many groups. The usual school method of grading on a one hundred per cent basis produces confusion. As a matter of fact, teachers cannot use more than a dozen grades with discrimination. This has been proved repeatedly by careful tests, and is evident from the erratic clustering of grades around arbitrary points on the scale in every school where the attempt is made to use a scale with thirty or more divisions.

cent of an undefined something is to beg the question. The administration of the curriculum on a percentage basis—giving grade B in Greek, for example, a value of 80 to 90 per cent—is apparently exact but in reality far from it.

Individual instructors, in defense of their extreme variations from the mean proportion of high and low grades, often assert that the students who elect their subjects are much better than the students who elect other courses. Figures 2 and 8 and Table XVI seem to indicate that quite the opposite is the truth. The poorer students elect a larger proportion of their work than the better students from courses in which the number of *high* grades given is relatively large. The better students elect a larger proportion of their work than the poorer students from courses in which the number of *low* grades given is relatively large. Furthermore, it is possible to show that the variations in grade distribution do not represent variations in the abilities of the groups of students concerned. We can demonstrate this by comparing the grades attained by a large number of students in certain depart-

ments with the grades attained by these *same* students in other departments.

Such a study is summarized in Table XXII. It exhibits the record in Harvard College of 363 men from twelve classes who later graduated with honor from the Harvard Law and Medical Schools. It gives the exact number of students receiving in a given subject a rank higher than their median rank for all subjects. Thus it appears that English, fine arts, mathematics, classics, and modern languages, in the order named, constitute a group in which the grades assigned are comparatively low. On the other hand, natural sciences, philosophy, history, and political sciences, in the order named, make up a group in which the grades assigned are comparatively high. At the two extremes stand English, in which 86 per cent of the students received lower than their median rank in all subjects, and natural sciences, in which 71 per cent of the same students received higher than their median rank. Furthermore, this table does not represent the extreme variations within departments. The eccentricities of the hardest markers in English and the easiest markers in natural sciences



are here offset by the other markers in each department. We must conclude, therefore, that the diverse distribution of grades shown in Figures 11-21 and Tables XVII-XXI cannot be justified by the unsupported assertion that the students electing certain subjects have far more ability than the students electing other subjects.

TABLE XXII

RECORDS IN HARVARD COLLEGE OF 363 HONOR GRADUATES  
IN LAW AND MEDICINE

*Number of students receiving grades in certain departments  
ABOVE their general average in all departments*

	Fine arts	Natural sciences	Mathematics	Philosophy	History	Modern Languages	English	Classics
Law graduates	24	68	33	78	86	67	12	42
Medical graduates	32	88	36	53	42	50	12	24
Total	56	156	69	131	128	117	24	66

*Number of students receiving grades in certain departments  
BELOW their general average in all departments*

	Fine arts	Natural sciences	Mathematics	Philosophy	History	Modern Languages	English	Classics
Law graduates	40	55	33	32	29	84	46	41
Medical graduates	45	19	48	33	53	55	109	32
Total	85	64	81	65	82	139	155	73

*Summary*

Number above	56	156	69	131	128	117	24	66
Subject	Fine arts	Natural sciences	Mathematics	Philosophy	History	Modern Languages	English	Classics
Number below	85	64	81	65	82	139	155	73

*The Possibility of a Scientific Distribution of College Credits*

The question now arises whether it is possible to supplant the personal equation as the chief factor in the awarding of college grades by scientific guidance? The immediate answer to this question depends on whether the distribution of mental traits in groups of individuals follows any regular law — and for the present on nothing else.<sup>1</sup> Are the differences

<sup>1</sup> The ultimate answer to this question will be the discovery of units of measurement in every school subject, and the construction, by scientific methods, of scales that can be applied as the foot-rule is now applied, regardless of time, or place, or persons. The best possible ratings of individuals by relative position are only temporary expedients that must some day give way to ratings by means of standard scales. The nearest approach to such a scale, and a perfect illustration of the method, is E. L. Thorndike's "Handwriting," *Teachers College Record*, March, 1910. The Courtis Standard Tests in Arithmetic also furnish a means of comparing the

among individuals in mental capacities explainable by any simple causes and amenable to any single type of description? They are not, if we are to accept the tables and figures just presented as correct records of the abilities of college students. But fortunately we are not dependent on such unscientific data. Psychologists have recently given us many rigorously scientific studies of the distribution of mental traits.

As several studies have clearly shown,<sup>1</sup> in achievement of one school with that of another, and the work of one year with that of another. We are not likely to continue to spend billions of dollars on education and be satisfied with guessing at results. Measurements of results with quantitative precision will be made as soon as people know enough to demand such measurements.

<sup>1</sup> Thorndike, E. L., *Educational Psychology* (1910), chapter iii, and *Mental and Social Measurements* (1904). New York : The Science Press. Also Galton, Francis, *Hereditary Genius*. W. S. Hall pointed out a few years ago that ordinary classes of students doing honest work and honestly marked will receive grades which conform in their distribution to the binomial curve. ("A Guide to the Equitable Grading of Students," *School Science and Mathematics*, Smith and Turton, Chicago.) Needless to say, if students are ranked by the mechanical process of counting the percentages of right answers to given tests, or by the "personal equation," or by dishonest methods, the results will not approximate any predicted form of distribution, even if that form correctly represents the abilities of the group in question.

any group of individuals representing a single species, the distribution of any trait not then influenced by natural selection appears to be that of a chance event. The surface of frequency for that trait approaches that of the probability integral. It is like the cross-section of a pile of sand dumped from a cart. The exact meaning and basis for this cannot be considered here. Suffice it to say that the most convenient way to represent tables of frequencies is by means of diagrams in which distances along a base line represent the different quantities, or units of measurement, and the heights of columns erected upon it represent their frequencies. Figure 19 presents several illustrations, D representing the results of a memory test. Such a figure is called a surface of frequency; and the line which encloses this surface is called a distribution curve. By using such graphic representations rather than algebraic formulæ, the answer to our question and the evidence for it can be made clear even to one who knows nothing of the mathematical properties of the surface of frequency of a chance event.

Figure 19, A, gives the distribution, or sur-

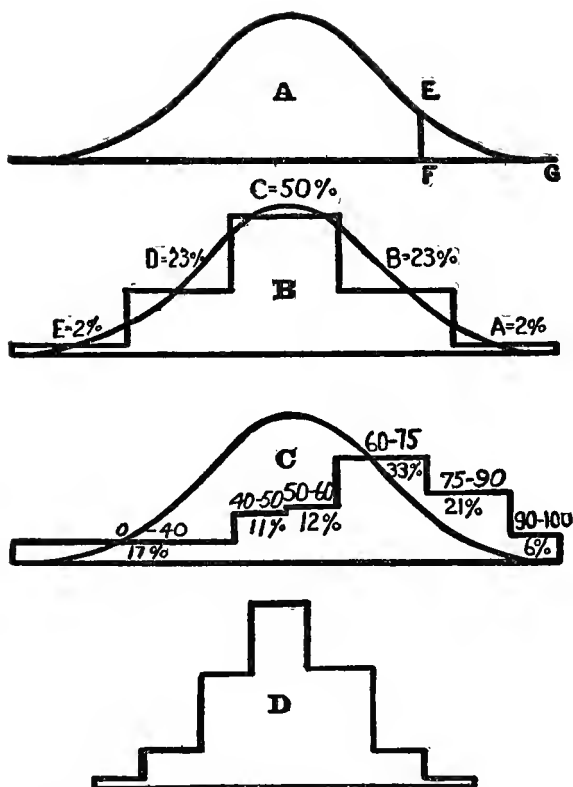


FIGURE 19. A. Form of distribution of the surface of frequency of the normal probability integral.

B. Theoretical distribution of grades. (Cattell.)

C. Distribution of 15,275 grades by the College Entrance Examination Board, in 1904.

D. Memory span for digits of 123 American women students. (Thorndike.)

face of frequency, of the type to which we assume that all distributions of mental traits conform. Figure B is the same type of distribution with a coarser separation into grades. This type is called the normal surface of frequency. It approximates the types found for most variable organs or functions in nature in the case of any single species when the organ or function in question is not subject to selection. It describes, for example, the distribution of accidental errors in scientific observation. Thorndike's numerous measurements show a remarkable uniformity in the distribution of mental traits among individuals. Figure 19, D, showing the memory span for digits in 123 American women students, is a good example. In all cases the distribution closely approximates the normal type.

Does the distribution of the complex abilities that determine excellence in college courses approximate this normal type? Theoretically it should, and our theory is supported in a striking way by the distribution of 8969 grades in twenty-one elementary courses for two years at Harvard College. The curve in Figure 21, representing this distribution, is nearly normal.

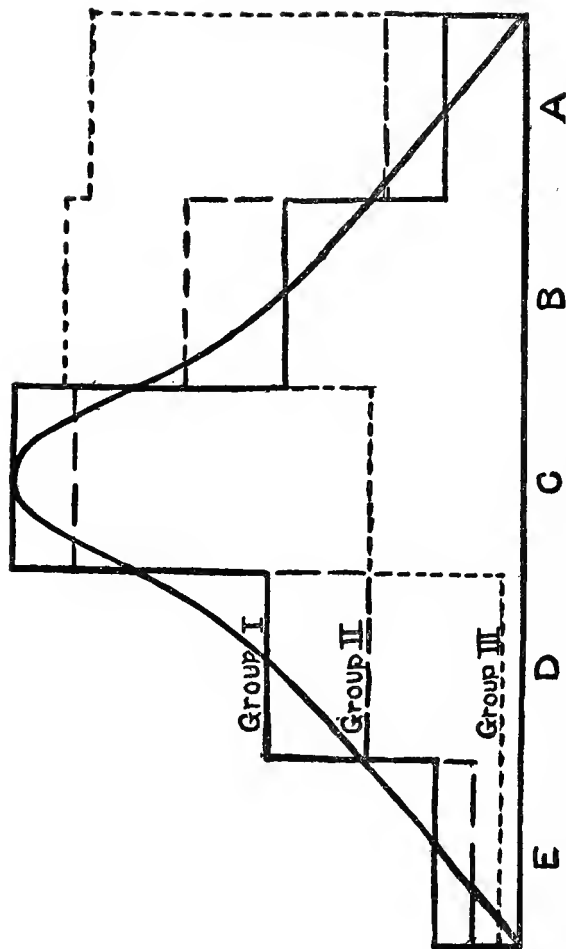


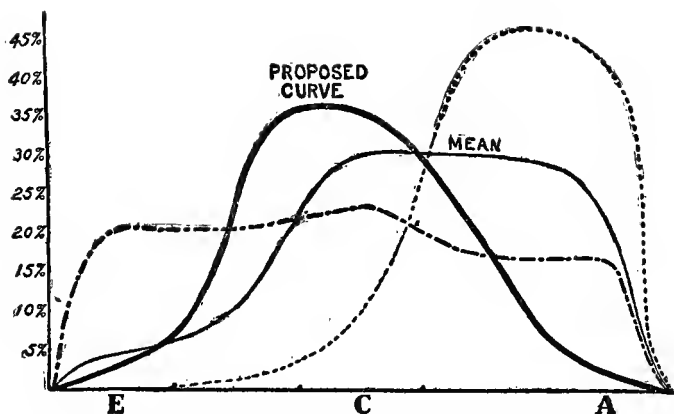
FIGURE 21. Showing the distribution of grades in elementary, intermediate, and advanced courses in Harvard College. The heavy curve shows how close to normal is the distribution of 8969 grades in elementary courses. (See Table XX.)

The percentages for the grades A-E are, respectively, 7, 20, 42, 21, 7. Yet Table XVII and Figures 11 and 12 show the wide variations among the instructors in these very courses. In fact, not a single instructor came as near to a normal distribution as the sum of all their grades. Now, no one of these markers is as likely to tell the truth as all together. Their several errors correct each other and thus give us, in Figure 21<sup>1</sup> (Group 1), a close approximation to the type of curve we should expect to have with an infinite number of cases.<sup>2</sup>

<sup>1</sup> In Bulletin 368 of the University of Wisconsin, Professor Dearborn attempts to justify the normal distribution of grades "from the fact that it is used in actual practice." Two objections may be made to this contention: first, very few instructors do closely approximate the normal distribution; second, as their practices have no scientific basis, any one of them could only by accident indicate the theoretically correct distribution. If, however, all of Professor Dearborn's curves were represented by one, made from thousands of grades by scores of instructors, it would conform more closely to the general biological law of variation than any of the curves he presents.

<sup>2</sup> In 1909-1910, the grades in certain elementary courses in Harvard College (Chemistry 1, Comparative Literature 1, English A, Government 1, History 1, Mathematics F, Philosophy C', Zoölogy 1') were distributed in the following percentages: A = 5.5, B = 21, C = 44, D = 19.5, E = 9. The





## Mean and Extreme Distributions of Grades A-E

*Total Grades = 2757 Mean Distribution = — Extreme Distributions = . . .*

FIGURE 20. Heavy black curve showing a theoretically defensible distribution of college grades in accord with the normal surface of frequency, as shown in Figure 19, A. The curves for the mean and extreme distribution of grades at Bowdoin College are given for comparison.

Accordingly we have scientific grounds for assuming that a theoretically correct distribution of the grades of college students will approach the normal surface of frequency (Figure 19, A and B) unless the group is subject to selection. In that case the curve would be skewed negatively or positively as in Figure 20. If the distribution of abilities of college students is normal, "the average ability is near the common ability, and both are near the point above which 50 per cent of the cases lie. The greater number of cases lie near the average, mode or median point, and degrees of ability a certain amount above or below that point are nearly equally common. The more remote a degree of ability is from the average or median or mode, the fewer

curve for these facts, which closely approximates that shown in Figure 21, was printed and sent to each instructor with an explanation of its meaning, and a superimposed red curve showing in each case precisely how the instructor's distribution differed from the norm. A table was prepared showing the distribution of grades for all courses having 80 or more students. The range for each grade in percentages was as follows :

A =	0.7-20
B =	6-39
C =	27-62
D =	0-31
E =	0-20

are the individuals who possess it. The difference between the degrees of ability above and below the average, mode or median between which 50 per cent of the individuals are included, is about two-ninths of the difference between the lowest and the highest degrees of ability found." This is a description of the normal distribution of abilities; it is a description of the distribution of college grades shown in Figure 19, B. It is the correct distribution, unless the group of individuals that make up the student body of a college is subject to selection.

As a matter of fact college students are a selected group.<sup>1</sup> If the surface A represents the distribution of all elementary school pupils at a given time, then most of those pupils who are to go to college fall in the upper end of that surface. If our colleges took the best students and only the best, if they made a clean cut off the top, then the distribution of their abilities would be represented by a surface closely approximating EFG of surface A. But for various reasons—including our ex-

<sup>1</sup> Thorndike, E. L., "The Selective Influence of the College," *Educational Review*, 30: 1.

tremely inaccurate means of attempting to determine fitness for entrance and some other factors to be discussed in the next chapter—our colleges do not admit merely those who are best fitted to pursue higher study, that is, the upper end of the surface. Some pupils find ways into college who occupy stations in the surface not far above the median, or the line of mediocre ability. This is clearly shown in Professor Dearborn's study of the relative standing in scholarship of students in high school and in college.<sup>1</sup> Consequently the lower end of the surface would not be clean-cut as in EFG, but rather like the heavy line of Figure 20. It would, of course, be skewed positively, for there could not possibly be many cases near G. Most of them would have to fall in the larger space near EF. The curve would be similar to that for incomes. The heavy line in Figure 20, therefore, though not representing with precision<sup>2</sup> the scientifically

<sup>1</sup> Dearborn, W. F. Published by the University of Wisconsin, 1909.

<sup>2</sup> "The curve of probability gives us the only precise meaning of the term 'scientific knowledge.' We have seen that human observations and measurements are never precisely accurate. Generalizations, in like manner, are never

correct distribution of college grades, does certainly come nearer the correct frequency curve than the normal curve or than that representing the present practice of any college or university in the country. In institutions where many sons of rich parents are dragged just above the failure line by tutors, the curve would be skewed even more than in Figure 20.

As we proceed upward through the years of school and college we should thus expect to find the curve skewed more and more in a positive direction, provided the standards are appropriately higher each year and a new base line is taken for each successive group. The cases cited by Professor Dearborn in Bulletin No. 368 of the University of Wisconsin, are to be commended rather than condemned :

precisely true. The formulation of a law of nature can never be made absolutely exact. Scientific knowledge, therefore, is not that absolutely exact and certain knowledge which the popular mind assumes it to be. It is certainty or exactness within a range of error, and to diminish that range is the object of scientific endeavor." Giddings, F. H., *Sociology*, Columbia University Press, N. Y., 1908, p. 24.

When marks are assigned according to the principles which have been discussed above, we should not only expect to find relatively little variation from year to year in the same class or grade, but the distribution of marks in the various grades in school from the lowest to the highest grade should not vary materially. If there should be any difference, we might expect to find, as we advanced through the grades, a somewhat higher percentage or frequency of high grades because the poorer students fall behind or drop out of school more frequently than do the better students. In order to see in how far this is true in practice, I have plotted the standings of a group of students from the third to the eighth grades, inclusive. This has been done in two different cities. The groups are composed largely of the same students throughout, although occasional students who entered after the third grade are included. The charts represent, therefore, in the main, only those students who entered the third grade in the year under study and remained in school, and whose complete records could be found. Under such circumstances then, we should not be prepared for such results as appear on comparison of the third and fourth and following grades of school A. In this case, promotion for these pupils means that the majority of the class receive somewhat poorer marks than they secured in the lower grade, and for a number a very considerable lower standing.

This is to be expected. In his objections to the use of the proposed distribution for advanced courses, Professor Dearborn fails to

take account of the higher standards which should be set in higher courses. Those who accept the principle of normal distribution *only* for freshman courses in college, or for any single period in the school life of the child, would be at a loss to prove its peculiar fitness for that period.

*Scientific Grading at the University of  
Missouri*

At least two institutions now enforce a distribution of grades on a scientific basis. At the University of Missouri, an A is approximately equal to an A, a B equal to a B, in a defined sense; so that grades may be intelligently and fairly used for administrative purposes. According to the definitions adopted in June, 1908, grades A+B must equal 25 per cent, grade C, 50 per cent, and grades D+E, 25 per cent of the total number given by each instructor.<sup>1</sup> Under the old system, forty teachers in five years graded their students so that 25 per cent received A, 35 per cent received B, and 32 per cent received C.

<sup>1</sup> The symbols used at the University of Missouri are E, S, M, I, F.

Moreover, the lack of uniformity among instructors was as great as at Harvard and California. Under the new system the irregularity of the grading was reduced the first year from one-fourth to one-tenth, or in the ratio of 5 to 2.

The distribution of 24,979 grades in percentages was as follows :

	Aug., 1908	Feb., 1909	June, 1909	Feb., 1910	
A	7.7	4.6	4.6	4.7	} 26.0
B	23.3	20.7	21.0	21.3	
C	41.2	47.5	48.8	49.6	} 20.9
D	8.7	13.7	13.8	14.4	
E	15.6	8.5	8.0	6.5	
Delayed	3.5	5.0	3.8	3.5	

Not counting the delayed reports, the distribution of the 11,342 grades for the first year of the new system was, in percentages :

A	4.9	} 26.6	D	14.5	} 23.5
B	21.7		E	9.0	
C	50				

In spite of the adopted definitions, the tendency remains to mark students too high. Every attempt to devise a system of marking whereby extraordinary achievement can be awarded the distinction it deserves has failed because of the democratic tendency in all in-



stitutions to place so large a proportion of students in the "distinguished" group. At Dartmouth College, a professor once announced to a large class, "Gentlemen, I must warn you that the committee on instruction has requested me to make my examinations harder, but, gentlemen, I am pleased to say that I shall continue to mark the papers." A century ago a Virginia academy attempted to have its students graded in six divisions,—*bonus, melior, optimus, and malus, pejor, pessimus*. But history records that "the continual tendency was to mark inferior students too high. Thus it came to pass that not half the bad scholars got *malus*, the worst almost never fell below it, and *bonus*, though a mark of approbation, came to be considered as a disgrace, while *optimus*, which ought to have been reserved for scholars of the highest merit, was commonly bestowed on all who rose above mediocrity." As the president of this old institution remarked, "a temporizing professor who loves popularity, and desires, like the old man in the fable, to please everybody, is sure to be guilty of this fault, and like many a politician, to sacrifice permanent good for temporary

favor." This is still the tendency everywhere, in spite of the manifest absurdity of declaring a large proportion of students distinguished.

On the other hand, nearly every institution has instructors who occasionally refuse pass marks to large proportions of their students. It was when a professor in Missouri "flunked" his entire class, and the boards overruled him by passing the entire class, that some of the faculty urged the adoption of a scientific system of grading. The students at another college put more sense than lyrical charm into the following lines:

There was a professor named Bray  
Who forgot the reflection on Bray,  
When in two of his classes  
He gave but few passes,  
And frightened good students away.

If an instructor refuses to pass some of the median half of the surface of distribution, it must mean, as a rule, that his methods of instruction or discipline are faulty, or that an unwarranted proportion of students have been admitted to a course they are unprepared to take. In either case, the fault is not with the students, but with the administration of the college.

The distribution of grades by the various departments at the University of Missouri in 1909, under the new rules, showed a range in percentage of A's from twenty in the history of art to zero in political science. The narrow limits of 2 to 7 per cent included seventy-two per cent of the departments. Thirteen departments gave the median percentage of A's, which was 4. The entire distribution of grades by departments was published and sent to the instructors, together with a table locating the responsibility for the failure to hold to the adopted definition of grades. The table gave the name of each instructor whose percentage of A-B grades differed from 25 by more than 2, and the name of each instructor whose percentage of D-E grades differed from 25 by more than 4. The table would have been an invaluable guide to students who were seeking the easiest way to get high grades. It was, in fact, a table of chances.

As a result of this wholesome publicity, the instructors in 1910 showed an even closer approximation to the adopted scheme of distribution. Table XXIII shows the proportion of each grade given in each department. Only

one department fell outside the range 2-9 per cent of A's. The limits A=2-8, B=16-27, C=40-59, D=7-26, E=2-11, would in no case exclude more than four of the forty-six departments reported. Omitting departments that reported less than 200 grades (no one of which fell at either extreme of the distribution) we have in Table XXIII the most scientific distribution of actual college credits ever made. This means that we come nearer to knowing what a grade stands for at the University of Missouri than at any other institution in the country.

Replies from 58 members of the faculty of the University of Missouri in 1910 show that 51 approve of the general principle of standardizing grades and 4 do not approve; only 1 reports that he does not aim to have his grades conform to the system in the long average; 21 tend in grading large, elementary classes to give low marks and offset them by higher marks given to advanced classes, 20 do not; 15 think that the effect, before the semester is over, is to discourage the efforts of some students appreciably, 23 do not; 26 believe that the effect of the system has been good, 7 regard it as bad, and 23 as inappreciable.

## TABLE XXIII

UNIVERSITY OF MISSOURI.

*Distribution of Grades, 1910.*

SUBJECTS OF STUDY	% A	% B	% C	% D	% E	% Del.	Total
Class. Arch. and History of Art	15	25	39	9	4	8	297
Botany	9	19	44	16	10	2	557
Physical Education	8	17	50	10	15	—	649
Latin	7	25	45	18	5	—	323
Germanic Languages	7	23	45	13	9	3	1006
Animal Husbandry	7	22	51	14	4	2	594
Economics	7	15	43	23	11	1	369
Agronomy	6	26	57	4	6	1	321
Horticulture	6	23	47	13	8	3	495
Music	6	20	58	4	11	1	280
Law	5	24	52	10	2	7	3984
Experimental Psychology	5	20	53	14	7	1	497
Mathematics	5	20	49	12	11	3	962
Philosophy	5	14	45	20	12	4	336
Veterinary Science	4	27	59	7	2	1	292
History	4	26	49	13	5	3	1023
Sociology	4	23	51	16	5	1	594
Education	4	22	50	16	7	1	751
Journalism	4	21	59	12	3	2	342
Political Science	4	21	44	22	3	6	280
Philosophy of Education	4	20	53	19	3	1	365
Home Economics	4	20	53	15	2	6	220
Physics	4	20	43	19	8	6	1030
Electrical Engineering	3	22	49	18	4	4	491
Mech. Draw. and Hydr. Engin.	3	22	49	12	8	6	726
Mechanical Engineering	3	21	53	16	6	1	642
Romance Languages	3	21	49	14	10	3	468
Shopwork	3	20	59	12	3	3	376
Theory and Practice of Art	3	19	48	15	9	6	289
English	3	18	50	18	8	3	1583
Chemistry	3	16	46	20	12	3	1379
Elocution	2	25	50	21	2	—	232
Civil Engineering	2	21	52	18	5	2	836
Zoölogy	2	19	49	20	8	2	391
Geology and Mineralogy	2	17	57	16	6	2	344
Military Education	2	16	52	6	—	24	293

*Standardized Grading at the University of  
Iowa*

The need of a scientific distribution of college credits was perceived at the University of Iowa and resulted, in 1910, in the adoption of the following definitions and rules :

- I. The marks used in the College of Liberal Arts shall be "A," "B," "C," "D," "E"; "Cond." for conditioned; and "F" for failure.
- II. "A" is a mark of high distinction to be given to the very small proportion of students, in the long run not exceeding 5 per cent, whose work approaches perfection or may be considered as approximately the best that can be expected of any student.
  - "B" is given for superior work plainly above the average.
  - "C" is given for average work. In the long run approximately 50 per cent of the students should receive this mark.
  - "D" is given for work below average but still unquestionably above the passing grade.
  - "E" is a low passing mark and implies poor work not quite deserving the mark failed. A student must balance hours marked "E" by as many hours marked "B" or "A" in order to retain class standing and for graduation.
  - "Conditioned" shall mean a conditional pass,

credit being given and a mark of "D" or "E" substituted upon fulfillment of the condition imposed by the department.

III. Note 1. The term "average" is used, not as the average of any one class, but as the amount of work within the power of a normal student according to the standard of the instructor.

Note 2. In a single given class the grades may fall far below or rise far above the average, but in the course of years and for large numbers of students, the above ratios should be closely approximated.

Note 3. These marks are to be understood strictly as defined above and are not to be interpreted upon a per cent basis.

IV. The registrar shall compile and publish each year for the use of the faculty, exclusively, a summary of the marks given by each department, the marks to be reduced to a basis of one thousand in each case.

### *Proposed Administration of College Credits*

Discarding the arbitrary divisions employed wherever undefined symbols and numbers are used, we may divide the area of the normal surface of frequency as it is always divided for other scientific purposes. We may mark off a middle area equal to the sum of the two areas left at the sides. Half the students of any group will be represented by this middle area.

We may designate this group by the symbol C, or K, or 75, or 13, or 289, or we may name it after the chairman of the school board. Much will be gained when we rid ourselves of the notion that the letters and numbers we now use so widely necessarily have any particular meaning. What we call this group does not matter: the significant thing is that it stands for an ability above and below which half the cases lie. It means that a student taken at random from a class of one hundred has one chance in four of falling above the middle group. It means that if we represent the ability of this group by C, we know precisely what an instructor means when he gives a student that grade. He means that the ability of the student in his course is greater than that of one-fourth of the course and less than that of another fourth of the course. This median group ought to be the largest, for it is where most human beings fall, as shown by the height of the probability curve.

We cannot indicate real distinction, however, unless we subdivide the upper quartile. We can do this arbitrarily or we can turn to a table of values of the normal probability in-



tegral.<sup>1</sup> Here the extreme ability is called 3. The point of the vertical line which separates the median group from the inferior group is .68. Halfway between 3. and .68 is 1.84. Accepting this as the division point for the upper and the lower quartile, we find at the upper end of the surface of distribution three per cent of the whole, and at the lower end three per cent. If we indicate the five sections, from the upper end to the lower, by the symbols A, B, C, D, E, we have the following distribution of grades :

$$\begin{aligned} A &= 3\% \\ B &= 22\% \\ C &= 50\% \\ D &= 22\% \\ E &= 3\% \end{aligned}$$

If, on the other hand, we assume that the distribution of abilities of college students is not normal, but skewed as indicated in Figure 20, the following percentages for each grade would more nearly represent the facts :

<sup>1</sup> A table of values of the normal probability integral is found on page 148 of Thorndike's "Mental and Social Measurements." In *Science*, 712 : 243, Max Meyer uses this basis for dividing the probability surface.

A	2%	}	20%
B	18%		
C	50%		
D	24%	}	30%
E	6%		

As variation in the abilities of those who elect a given course is sure to occur from year to year, some would prefer an elastic definition of the grades; for example:

A	=	0-6%
B	=	15-21%
C	=	45-55%
D	=	20-28%
E	=	0-10%

Any one of these definitions of the meaning of the five groups would come nearer to telling the truth, be more serviceable for administrative purposes, and convert the vast amount of labor now used in making out grades into more valuable data for the scientific study of education than the present personal distribution of college credits. A defensible definition of grades should be adopted by each faculty and its members should be required to adhere closely to it, in the long run, at least in all courses primarily for undergrad-

uates,<sup>1</sup> until we can supplant the method of grading by relative position by scales made up of equal units.

After the definition of grades is adopted, a table should be sent to each instructor, as often as grades are required at the college office, showing the distribution of grades in each course in the college and emphasizing those that depart far in either direction from the adopted mean. Every instructor should be requested to justify his eccentricities, at least in a series of years. If such publicity does not accomplish sufficient uniformity for administrative purposes, insurgent and careless instructors should be reminded by the appropriate authorities that it is for the interest of all for each to abide by the decision of the faculty.

<sup>1</sup> A director of civil service examinations in South Africa noticed that the curve of good examiners resembled the curve of a bad pistol shot trying to hit a vertical line. Accordingly, he tried to educate examiners. On the sheets on which examiners were expected to enter their records, he had printed a curve resembling a gendarme's hat,—a normal curve. Each examiner was requested to grade 100 papers taken at random, to plot his curve upon the diagram, and then revise his method of marking so that his results would come nearer to the model. By means of such diagrams, the examiners were themselves rated in efficiency. (Sargent, E. B., *Nature*, 70: 63.)

To rate instructors solely with respect to the proportion of high grades awarded by them, or solely with respect to the quality of students attracted to their courses, is evidently inadequate. An instructor may give more high grades than his associates, because he has more students who deserve distinction. But if this is the case, the administrators of the college curriculum can readily devise a means of measurement which will show at a glance the justification for any *conspicuous* deviation from the normal distribution of grades. All the instructors of any institution may be located on a scale which shall take account not only of the grades awarded but as well of the quality of the students electing each course.

For example, as part of an investigation conducted at Williams College by a committee in accordance with a resolution of the Faculty, Dean Ferry, at the request of the President, devised a plan for measuring the relative quality of the classes in the elective courses of Junior and Senior years and of the grades given in each. Taking the work of the first two years, where the courses are nearly all prescribed, as a basis for the determination of

the scholarship of the students, statistics were carefully worked out for the elective courses of three successive classes. The results of his extensive study are summarized for 30 instructors in Table XXIV. Column I gives each instructor his position with respect to the quality of students in his courses. The larger the proportion of men attracted to his courses from the upper half of the student body in general scholarship, the larger the plus rating of the instructor. For purposes of comparison, Column II gives each instructor his position with respect to the proportion of high grades and low grades assigned by him. Thus, for example, instructor number 4 has the high rating of 41 in the quality of his students and the low rating of -23 in the assignment of grades. Instructor number 26, on the contrary, has the low rating of -21 in quality of students and the high rating of 52 in grades assigned. In other words, he has a conspicuously large proportion of the students whose general scholarship is low, and to these poor students he awards a conspicuously large proportion of high grades. Many a teacher would be surprised to discover his standing on such a scale, and the college

administrator who undertakes to deal with such discrepancies, through discussion with individual members of the faculty, will do well to provide himself with a quantitative presentation of the facts.<sup>1</sup>

TABLE XXIV

A RATING OF ELECTIVE CLASSES IN WILLIAMS COLLEGE

INSTRUC- TOR	I	II	INSTRUC- TOR	I	II
1	113	0	16	2	41
2	113	0	17	1	42
3	77	27	18	-1	56
4	41	-23	19	-2	6
5	39	23	20	-4	-11
6	39	-21	21	-5	89
7	24	3	22	-7	63
8	20	49	23	-8	59
9	17	50	24	-14	40
10	15	34	25	-17	95
11	13	20	26	-21	52
12	9	41	27	-22	89
13	7	32	28	-30	114
14	6	58	29	-33	66
15	5	63	30	-40	73

Such regulation will be resented by many college teachers as an infringement on their rights. But academic freedom that allows each member of a faculty to do as he pleases in matters that reach far beyond the interests of his own department is intolerable license. As

<sup>1</sup> The method by which Dean Ferry secured these index figures may be found in his report for 1910-1911.

President Eliot has said:<sup>1</sup> "A faculty can properly criticise the results of any professor's, or other instructor's, work as they appear in certain easily visible ways. Among such visible evidences are . . . the resort of obviously incompetent or uninterested students to his courses; examination papers of a trivial or pedantic sort; uniform high grades or uniform low grades returned by the professor; an extraordinary number of distinctions earned in his courses; or an extraordinary number of rejections and failures. These are legitimate subjects of inquiry by a faculty committee or by faculty officials, and can be dealt with by a faculty without impairing just academic freedom. The knowledge that this power of revision resides in a faculty is a valuable control over individual eccentricities."

It is sometimes said that "there are usually some courses in a university which, from year to year, secure only an inferior grade of pupils, and other lines of work which, for various reasons, secure a disproportionate number of superior students. Classical students in the

<sup>1</sup> Eliot, C. W., *University Administration*, Houghton Mifflin Co., 1908, p. 110.

high school and university, and students in the advanced courses in mathematics, are often examples of such selected groups of students. The above principle would not be equitable in these cases." In answer to this argument, it should be noted, first, that it is, in large part, the very grading to which objection is raised that has caused the resort of poor students to certain courses; and, second, if the better men do resort in larger proportions to certain courses, that fact can be readily shown by statistics. It is one of the many educational questions on which speculation and opinion are quite out of place.

Without a scientific administration of college credits,<sup>1</sup> the other safeguards of the Elective System are insufficient. There will always be students who are more interested in getting through their courses than in getting profit from them. The poorer students, as Figures 2 and 8 clearly show, seek the courses which give the larger proportions of high grades. Earnest but needy students, too, are under

<sup>1</sup> At the close of this discussion, the footnote on page 272 should be emphasized. Even the best grading by relative position is only a temporary expedient.



great temptation to elect courses with a view to winning money scholarships, as long as scholarships are awarded on the false assumption that an A is equal to an A. To all students who are prompted by unworthy motives in the election of studies, Figures 11-21 are charts pointing the easiest courses to a degree. And students in all colleges are guided by such charts, more or less accurately plotted. It is futile for the authorities to try to suppress such information and protect their instructors from the notoriety they deserve. Nor is the Elective System to blame for the presence of snap courses and the relative ease with which high grades are secured from certain instructors. Nor is the credit-for-quality plan to be condemned because it accentuates the evils of our marking devices. The only way to safeguard the Elective System and the credit-for-quality plan against the evils here set forth is to enforce a scientific distribution of college credits.

## CHAPTER XIV

### OUR DEMOCRATIC AMERICAN COLLEGE: SOME CONDITIONS AFFECTING THE ADMINISTRATION OF ITS CURRICULUM

THE longer one studies a single problem in college administration, the more complex it appears. The college critic, to be sure, usually finds a simple solution, especially if he has had no close encounters with the difficulties. The ease with which he isolates a problem and settles it is surprising, for there is not a single question, in that comprehensive list of several hundred prepared by the Oberlin faculty, that must not merge its interests with those of every other question. Accordingly, it may be permissible at the close of a dissertation on the college course of study to present a few considerations which, though not primarily concerned with the curriculum, nevertheless do affect its administration.

When Mr. Slosson started on his tour of American universities, to collect material for

the articles in the *Independent*, he placed at the head of the list of questions that he purposed to ask, "Does the spirit of democracy prevail in this university?" He soon dropped the question as useless, because it was answered everywhere before he asked it, and always in the same way. The faculty, students, and alumni of each university agreed on the purity of its democracy. James Bryce recently praised this spirit of democracy, and referred to the United States as the nation having the largest proportion of its young men in colleges. That a nation devoted, at least theoretically, to democratic ideals and popular education should rejoice in all this is natural. It is equally natural that those whose main business in life reveals the shortcomings of the American college should raise the question whether this democratic spirit in higher education is altogether praiseworthy, — should inquire what kind of institution we have built in devotion to democratic ideals. If we will not plead guilty to the charge that "college education is to-day chiefly notable for its ineffectiveness"; if we resent the sweeping arraignments by Mr. Birdseye and by Mr. Flexner; yet there are innum-

erable other critics whose charges we must meet. Condemnation of the college is the order of the day.

The American college is on trial. There seems to be no defect in the whole broad realm of human possibilities but the college, sooner or later, must take the blame for it. This shows the great faith of the American people in the innate power of the college. And, after all, the American people are the jury, and the jury has spoken. What more practical verdict could one ask than the university and college registration statistics? Every year sees a larger enrolment. The total increase in seventeen years was over 150 per cent, an increase out of all proportion to the corresponding gains in population. From 1902 to 1905, the registration of the small colleges in New England increased over twenty per cent; and the rate continues until the question is, how much longer shall we have small colleges? Here, then, are the American public staking their sons, their daughters and their millions on their faith in the possibilities of the college, and yet agreeing, on the whole, with the verdict of the *Nation* that "the college is the

least satisfactory part of our educational system and has urgent need to justify itself." This seems an anomalous condition,—our colleges growing rapidly both in numbers and in popular disapproval. And yet it may not be difficult to trace causal connections.

### *Proposed College Reforms*

But we may first consider some of the proposed college reforms. Among them, the one urged with most insistence and with the greatest weight of authority is the return to the classics as the backbone of the college course. Mr. John Corbin contends that in responding to the modern scientific impulse, we have renounced the function of mental training and character building. This is an easy and a common explanation of our failings; but it ignores the fact that no one has yet been able to prove that the so-called culture subjects—classics or others—are inherently better fitted than the sciences for mental training and character building. And certainly no such remedy would satisfy our most voluminous critics. "The cry is for more culture," they say, "without any real appreciation that on present lines this

means more mental and moral shiftlessness." Culture courses seem to them a "premium on laziness, mental sloth, carelessness and inaccuracy." And Dean Briggs's committee appears to support these contentions, in reporting that the easiest way to induce students to take a subject for culture is to make it not too difficult; because recognized as a culture course, it tends to grow softer and more general. Even assuming that Professor Wendell is right in declaring that the one great need is the power of voluntary attention that was formerly secured through the humanities, yet it seems impossible to prove that the classics are best adapted for cultivating this power. If, as Mr. Wendell seems to contend,<sup>1</sup> the subject-matter of a course must be lifeless, and useless, and therefore essentially uninteresting, in order to give the needed discipline, then ingenious and hard-hearted pedagogs, especially if newly robed in doctor's gowns, can ride their hobbies — metaphysics, counterpoint, Egyptian archæology, or whatever you will — into regions as dull and unprofitable as those in which the knights of the classics rode their steeds — and

<sup>1</sup> *The Privileged Classes in America.*

the boys their ponies — in the lamented days of yore. For the most part the arguments urged in favor of required study of the classics have either adduced educational values more economically yielded by other studies, or rested unreasonably on the doctrine of formal discipline.

Mr. Flexner's remedies are not as convincing as his charges. He declares that "the educational field is now free for constructive effort ; for a positive, not a negative doctrine." First, he would reassert the priority of the college by removing the pernicious influence of the graduate schools. He here asserts a conspicuous need, though it should be noted that the presence of graduate schools does not render necessary — even when it renders convenient — the employment of young, temporary, inexperienced, underpaid instructors, whose chief interests are outside their classes. Moreover, this remedy at best applies only to the minority of university colleges, not to the majority of detached colleges which seem to many critics in quite as great need of reform. As a second remedy he would remove all restraints from the secondary schools. In place of ex-

aminations he would have us consider mainly "range, seriousness and cohesiveness of previous study"; but he overlooks the fact that our present certificate and examination systems attempt, with what meagre success we are well aware, to test precisely "these really vital facts"—and he proposes no definite substitute. His further concrete suggestions are that college faculties should be recruited in part from secondary school teachers, that American History should be a required study, and that we should discard—what Mr. Birdseye demands—commercial standards of success.

The method of revealing joy in scholarship to undergraduates that has been hailed with greatest interest is the Princeton Preceptorial Plan. The prevailing idea seems to be that there is some marvelous force in this device that at once turns shiftless idlers into earnest students. The fact is that the success of the plan is due to the power of the men chosen as preceptors and to the backbone of the administration. The plan itself could be applied to many an institution, under present management, without providing sufficient incentive to hard work. It is a mistake to suppose that



even at Princeton the plan has succeeded in lifting the submerged tenth to a plane of passable scholarship. On the contrary, 680 men were dropped in six years. A like insistence on excellence in scholarship and a like indifference to numbers of students would result, with or without the preceptor system, in improving any decadent college. For whether the college lived or died, the result would aid the solution of our college problems. One of our national democratic delusions is the belief that every institution which in some misguided moment has taken upon itself the name of university must somehow contrive to prolong its life.

### *Commercial Standards of Success*

A present weakness of American colleges is lack of educational insight and moral courage, to which must be ascribed the failure of college faculties to maintain standards of scholarship and conduct at the expense of enrolment numbers and tuition fees. Not that this is true of all institutions: any one may make such exceptions as his experience or his loyalty seems to warrant. But certain it is that many a demo-

cratic college has shown slackness and narrowness of vision, if not laziness and cowardice and dishonesty, in letting down the standards of admission in order to get students in, and then emasculating the college work in order to keep them in. The colleges are in a mad race for numbers — a race in which the goal is inefficiency, in which, therefore, the only colleges that can win honor are those that drop out. Let us see if this is not a dominant difficulty in the solution of our vexed college problems.

Shall admission to college be by certificate or by examination? As long as our numerical standards prevail, neither plan can give satisfaction. Consider the certificate system. Boys in some schools are certified on almost any basis other than their genuine accomplishment of the catalog requirements, or their fitness to do genuine college work. Many authorities first consider what college the candidate wishes to attend and then fill out the certificate with due consideration to the laxity of the college. The weakling then enters to make the college still laxer. Thus a vicious circle is run, tending always to the demoralization of the college.

For if the college is sufficiently eager for numbers and weak in backbone, the school cannot suffer at the hands of certificate boards, no matter how absurd its certificates. Again, there are principals who certify a boy in a subject in which he is utterly unprepared, say Latin or mathematics, provided the boy will go to a college where these subjects are not required, and promise not to elect them. For in that case also, the board has no evidence against the school. Then, too, there are principals who refuse to grant certificates, in order to induce boys to go to colleges that require neither certificates nor examinations. Again the school is "protected." If sufficiently clever it can stay on the approved list. From the college standpoint the condition is still worse. For instance, a high school principal writes that he refused to certify one boy in physics and chemistry, because "he had practically no knowledge of the elements of these subjects." Yet the boy "was accepted without condition" by a university that is a member of a certificate board. Thus the school was protected, because the university violated the vital principle of the whole certificate system. Further-

more, principals say that anything at all seems to be acceptable at some institutions as a certificate of moral character. "I have nothing to say for this boy," or, "you have taken worse boys," or "the boy might reform in college," — any evasion at all protects the principal, passes the scrutiny of some college officers, and is in no way checked by certificate boards. Common honesty is a present educational need.

Some worthless certificates do stare schools in the face when they apply for continuance on the approved list. But it is then too late to save either the boy or the college from the injury of the dishonest paper. A boy entered Bowdoin College from an approved Massachusetts high school, credited with so many "points" that it seemed an injustice to give him the humble name of freshman. He did his level best, but failed to attain passing rank in a single subject. After the college had dropped the boy, an effort was made to secure some explanation from the principal; but he was busy signing certificates in another city.

To the boy who is denied a certificate is left the loophole of college examinations. How

large and well lubricated this opening may become, when the college thinks it needs the boy, is well known. A letter from a New England college president urges a boy, who had proved himself unfit mentally for a second-rate high school, to visit the college, take a drive around the campus and not worry about entrance examinations or expenses. President Pritchett probably had many such cases in mind when he said that college rivalry has led not only to a most undignified solicitation of students, but to a shading of tuition fees to the loss of the college income. The fact is that any college may secretly make its examinations as much of a fiasco as its interest in the race for numbers may seem to demand; and therefore uniformity in entrance requirements amounts to little unless we have, as well, uniform standards in the setting and grading of examination papers. The poorest college can afford to print in its catalog the same requirements as the best. How wide the gulf between printing and performance may be is suggested by this case: A principal declined to certify a boy in a single subject, but added that he was "a good boy" and had spent four

years in the school. The boy was accepted by the college without examination, and the college was accepted by the Carnegie Foundation.

Few are deceived by the ambitious advertisement of C—— College. Brushing Harvard aside with superior scorn, it advertises itself as “OLDEST, LARGEST, CHEAPEST, BEST”; and, as sufficient proof, adds the lines, “8 DEPARTMENTS, 8 PROFESSORS.” Nor are many deceived by those ambitious fitting schools that label their crude products with degrees. But between the best institutions and the worst there are all kinds. For the states to adopt a fairly uniform and severe restriction on the use of the terms “university” and “college” would certainly help; for it would define the field of competition, it would relieve college education of condemnation not earned by the better colleges, and it would eliminate some weaklings; though it is true that “the college that is least worthy of the name, that is in every way inferior to such academies as Exeter and Andover, is the very one which would cling most desperately to the title, would be most reluctant to relinquish its right to confer worthless degrees.”

*Intercollegiate Athletics*

How the rush for numbers has broken the backbone of college administration, and justified some of the adverse testimony we have heard, is conspicuously illustrated by intercollegiate athletics. "We must do as others do," — "to attract students we must win games at any cost." These are the hidden motives that prompt many an athletic policy. No college is too small to feel that it must have as many teams, as many games, as much paraphernalia, and as big an automatic cheering section at every game as the largest university. Indeed, the smallness of the college, far from restricting such activities, is used as evidence of the need of more and more, in order that the college may become larger. Of the 480 institutions ranked as colleges by the Commissioner of Education, 340 are reported as having less than 200 students. How many of the faculties of these colleges, shutting their ears to popular clamor, and the certain disfavor of students and alumni, disregarding the supposed needs of advertising and the pernicious argument that "what others do, we must do," how many

would be so bold as to assert—indeed, is there one that would assert—that intercollegiate athletics, as conducted by these small colleges, best promote those objects whereby alone the American college can hope to justify its existence in the face of the serious charges now brought against it? Yet with what pusillanimous indecision have we dallied with the whole matter for twenty years. What bold surgeons we have thought ourselves when we have treated the malady by cutting down a schedule from twenty-two games to twenty. And what a sorry chance all this time the still, small voice of scholarship has had against the yelling of thirty thousand at a football game.

It is needless here to rehearse the crimes that have been committed against a wisely administered college curriculum in the name of intercollegiate athletics, and in the supposed interest of enrolment and fees. One boy made no pretense of being prepared for college; his school principal protested, in a letter to the college president, that the boy was at least two years short of preparation. That boy's entrance formalities consisted in walking into the lecture rooms. "They would not dare to



drop me," he said; and they did not. His brother was captain of the football team. Another boy who did but two years' high school work was reported in a college catalog as a freshman on trial, and in the newspapers as "the best hole-opener in the college line-up." Another unprepared boy registered at one college, pitched a ball game, left his trunk at a second college awaiting a promised offer, applied to a third college for a salary as pitcher, registered at a fourth, became captain of its baseball team, and after four years of service took his degree and signed a contract with a national league team.

Nothing can meet the situation but the honest and uncompromising devotion to high ideals of faculties that are able to lift their eyes from the level of registration and tuition figures. We shall look in vain to the alumni for reform in this particular. One has a right to be skeptical about the support of alumni in efforts to raise the standard of scholarship, when one hears a large body of graduates wildly cheer the after-dinner sentiment that "a student should refuse to allow his studies to interfere with athletics." On such an occasion

one meets the kind of evidence that has led our critics to declare that in the great majority of our colleges, the president, the faculty, and the trustees do not dare run counter to the feelings of the undergraduates and those noisy and half-baked young graduates who yell for the athletic teams and who are supposed to voice alumni opinion. Genuine reform and keen competition for numbers seem incompatible.

### *So-called Gains in Numbers*

“Gains in numbers!” Every fall we hear that this college and that has made great gains in numbers. And yet we have no idea whether there have been gains in any vital sense until we know first, what proportion of those admitted are qualified to pursue the courses offered, and, second, whether there has been a corresponding increase in the number and efficiency of the faculty. Of late the only institutions that exhibit much loss in registration are Princeton and Harvard, yet some believe that few institutions have made greater gains in efficiency. This is not a mere coincidence. The dropping of 680 incompetents in six years

at Princeton, and the loss of 50 "specials" at Harvard in 1910, has a meaning in progress precisely opposite to the so-called great gains of some colleges. We must rid ourselves of the notion that there is any credit *per se* in enrolment gains. Any college — without exception — can increase its numbers if it is willing to pay the price; just as, on the same terms, jail birds can be elected to political office in some American cities. Conversely, any college, without exception, can increase its efficiency if it is willing to pay the price, which under present conditions is likely to be a falling off in numbers. Innumerable devices to coax boys to work have failed in cases where the one thing needful was to convince them, by the evidence of enforced discipline, that they must work or leave college.

There is no college to take issue with President Garfield in his inaugural declaration that "the men against whom we should close the doors promptly and effectually are those who loaf because they choose to, and who do not propose to change their occupation." Yet, unless the experts called by the prosecution are bearing false witness, our colleges harbor many

men against whom the doors should be closed on the charge of "miscellaneous worthlessness." "There was a boy," said the president of a leading university, "so quick that he could always pass the examinations, though he neglected his work three months out of every half year. In the other month he would take tutors, and in spite of everything his teachers could do, they would have to give him pretty high grades at the examination. . . . Now that boy fell into many vicious ways. . . . It was impossible to prevent him from graduating. The result was that he shot himself in his father's cellar within a few years after graduation, and really it was the best way out." When a university president asserts that it is impossible to prevent a boy from graduating from college, though he neglects his work three months out of every half year, and falls into vicious ways, we must admit that the prosecuting attorney has found an effective witness for his case. But some men disagree on this point. Their experience has convinced them that it is not only possible to prevent such a boy from continuing in college, but it is imperative. The quick march out of college, they believe, would

have been, if not the best way out of his difficulties, at least a better way than the one he discovered. Just such lads as this — who should never have been labeled as college products — have incited the testimony of our expert witnesses for the prosecution.

### *Conditioned and Special Students*

To what is due the “weakening of intellectual stamina observed among our undergraduates”? Is it not in part this democratic indulgence toward incompetency which clears the track of annoying obstructions in the race for numbers and tuition fees? To what inconsistencies it leads our college faculties. “Such and such subjects must be presented for admission,” or “fourteen of these points are required of all candidates,” our current catalogs declare, withholding as a rule the information most eagerly sought by the prevailing type of preparatory school boy, namely, how many subjects or points one may fail to present and yet be admitted. Boys are ingenious; they are sure to find out how many of the required points are required; for their interest is not so much in the profession of

the catalog as in the performance of the college.

To a majority of candidates our colleges virtually say: "According to our professed standards, you are not prepared to undertake college work. Although the secondary school opportunities are greater than ever before, although the wider range of admission subjects makes failure every year less excusable, yet you have failed to present our minimum requirements. Nevertheless, we admit you, allow you to try to do college work in the same classes with those who are prepared, and, in addition, we require you to make up your deficiencies in secondary school work." This is substantially what Harvard College said in 1909 to 58 per cent of the 607 freshmen. At Yale, 57 per cent of the incoming class, and at Columbia about the same proportion, were admitted with less than the "required" points. Nineteen of the freshmen admitted to the college department of Columbia University were deficient in a full year of preparatory school work. At Princeton, 210 out of 360 were thus admitted with conditions. And there is no reason to suppose that our strongest institutions

are in this respect the greatest sinners among us. There is only too much concrete evidence to the contrary.

Furthermore, if this overlooking of inequalities is not sufficient to satisfy the most democratic of candidates, he has left the opening for "special students." If he will step in through this back door, he will find himself in the same classes with those who enter by the front door. He will be called a "special student" or a "freshman on trial," or a "provisional candidate for a degree," or a "student on probation"; but he does not care. He is confident that an institution so devoted to democratic ideals as to make his entrance easy will not make his continued residence difficult. Maturity and earnestness of purpose, it is true, should admit some candidates who, for good reasons, have not trod the beaten path to the college gates. But there is reason to believe that a majority of the 4073 "special students," enrolled in the institutions included in the report of the Carnegie Foundation, slipped in through the back door merely because they were not qualified to enter the front door, and should have been barred out altogether.

As Americans we are proud of the principle that the higher education should be open to every boy who is prepared for it, and who is ready to make the sacrifices it involves. But was it in devotion to this ideal that one New England college admitted, without examination, a boy whose school declined to certify him in a single subject? Was it in devotion to this ideal that another New England college admitted a star half-back with but half a school course to his credit? that another New England college employed on a famous football team three men who had failed in their academy course? that another New England college accepted two candidates in violation of its agreement with the certificate board? that another New England college welcomed, as captain of its baseball team, a boy under discipline by a rival college? that another New England college credited with advanced Latin a full-back who had failed in the second year Latin of his academy? It may be a democratic impulse that prompts various colleges to advertise the admission of women on equal terms with men, but can it be the same impulse that leads these colleges to discriminate against



women both before and after admission? Can democratic spirit explain the policy of those institutions that make their profession of requirements as pretentious as the best and their examinations a fiasco? Oh, spirit of democracy, what scrambles for numbers and fees are performed in thy name!

Now the immediate effect on the schools of this democratic leniency toward the unfit, is to hamper the work of all those teachers who are honestly striving to promote genuine, sustained, intellectual effort; and, at the same time, such leniency makes it easier for lazy and weak-backed teachers to tolerate slipshod work. The prospective college student interprets all this as a guarantee of admission despite superficiality or utter deficiency of preparation in any particular subject. He is thus prepared for further evasion of work after he gains easy admission to college.

The college is further hampered by the extra burdens placed on the unfit. Unless our devices for determining preparation for college are useless, those students most heavily "conditioned" must be, as a class, least fit for college work. Yet on precisely this class we lay

the heaviest load. At the same time we make scarcely any provisions for assisting these least fit students to carry these extra burdens which, with all the secondary school aids, they have hitherto failed to carry. The inevitable result is the lowering of the standards of work for the whole college. The freshman winds are tempered to the lamb that is shorn of his entrance credits. When some students are allowed to take six courses, while many are taking only four, it stands to reason that the amount of work required in each course must be diminished, to the detriment of college standards, unless those students taking six courses are conspicuously fit to carry 50 per cent more work than other students. Quite the contrary is often the case, since many who take extra courses do so to make up deficiencies. According to all logic, students should be allowed to take more than the required number of courses in one year, only on the evidence of extraordinary ability.

All this suggests the question whether, under an ideal system, we should not declare all candidates either prepared or unprepared, do away with entrance conditions, and thus

free all the college work from the unreasonable burdens placed upon those who, judged by our own tests, are least fit to bear them. The devices whereby "conditioned" and "special" students are now used, in the name of democratic principles, to swell numbers and income, seriously hamper both preparatory schools and colleges in all efforts to remedy the lax conditions which our critics deplore.

### *Lowering of Standards*

Still further to dim the hope of securing serious study and sustained application from our students, most colleges send off groups, by no means those who can best afford the time, on advertising trips — musical, dramatic, fraternity, debating, athletic. Gloss it over as we may with specious reasoning about "make-up" work, it is still evident that if a week at college classes means any real intellectual accomplishment, the progress of the good students who remain faithfully at their work must eventually be retarded by the poorer students who are constantly dropping into the same classes after excused absences for outside activities. Though we need not abolish these

activities — for there is some good in all of them — we might grant no special excuses whatever for neglect of college work, and allow the outside activities to adjust themselves, as best they could, to those chief inside activities for the neglect of which the American college is now on trial.

The authorities of some of our state universities, politicians as they are, or partly dependent on politicians, incline to the idea that has long clogged our public high schools — that a period of residence of any sober and faithful child of a taxpayer entitles him to graduation. Nor are the ideals of all our privately endowed colleges illumined by a much brighter light. Jealous of the rapid growth of state institutions (they have grown twice as rapidly as all others in the past twenty years), our private colleges incline toward the patently absurd theory that nearly every boy should go to college and stay there. Our public grammar schools, which are obliged to take and to keep all sorts of raw material, have some excuse for the pernicious lock-step, through which bright boys form vicious habits of idling, while dull boys in the same classes are being dragged

along. But private endowed colleges, free from the most harassing drawbacks of public schools, have no excuse for allowing the mediocre to set the pace for the rest.

### *Scholarships*

One might define democracy in college administration with a borrowed phrase, — our ill-advised belief in the universal efficacy of college education to make a good piece of furniture out of a poor stick of wood. Accepting this definition, we are safe in declaring that the present wide distribution of scholarships in American colleges is truly democratic. Certainly we are not using these trust funds, as best we may, to further Ruskin's aim of education, "to raise the fittest into positions of influence, and to give to every scale of intellect its natural sphere." In some colleges, democratic ideals fall scarcely short of putting a premium on mediocrity. Scholarships are granted the sorriest candidates, every one of whom adds a burden, though no hope of adequate pay, to the already overworked and inadequate faculties. The treasurer of a New England college pointed out on the campus, as one of the curi-

osities of the institution, a boy who actually paid his tuition fees. The bursar of another New England college, while visiting still a third college, expressed his surprise on finding that boys were actually required to pay their term-bills or leave college. Intimate acquaintance with self-supporting students the country over will show that men of real promise would gain in educational opportunity, if the funds available for scholarships were distributed among fewer students. American colleges would then be smaller but better institutions; nay, they would be smaller, and therefore better. At present, they suggest the report of a "hired man" to the proprietor of a sugar camp in Vermont. After inspecting the sap buckets, he declared, "Some is full, some half full, some runnin' over. Average, too full." Secondary school teachers have been repeatedly surprised to learn that boys whom they regarded as hardly fit for college have had no difficulty in securing scholarships. This must have been at the expense of those better fitted. The best youth the country affords are given half a chance in order that some of the weakest may have an equal chance. One is still reminded of the remark of Agassiz

in 1864, — “The bright students are now deprived of the best advantages to be had, because the dull or the indifferent must be treated like children.” As long as scholarships are used as a means of attracting numbers, there will be insufficient aid for the few students of conspicuous worth.

To atone for this thin spreading of its funds, our democracy errs still further in favoring self-supporting students at the expense of intellectual standards. Many faculties, through sympathy for indigent men who are ambitious to secure a liberal education, allow them to remain in college under conditions which render a liberal education impossible. The rest of the students suffer, because the college work must be tempered to those well-intending, but not necessarily able, boys who are obliged to spend a large part of their time and effort in extraneous occupations.

### *The Small College*

A good deal of nonsense is heard about the superiority of the small college over the large and the superiority of the city college over the country college. Size and location are rel-

atively insignificant matters compared with the calibre of the faculty and the standard of work. Large colleges as a class are superior to small colleges as a class, partly because their administrators and faculties as a body are men of greater insight and courage. Yet it is easy to name a score of small colleges that surpass a score of large universities, and there is an ever-increasing number of parents who stake their sons and daughters on the belief that there are to-day small colleges superior to the best of university colleges. Such a belief seems to many as yet unwarranted. But the conviction is growing that a small college with the requisite insight and courage to become a Johns Hopkins for undergraduates, the Balliol of America, would soon take first rank among us, and find its degree the most highly prized in America. Though it were located in the forests of Aroostook County, or on the shores of Puget Sound, there would be, every autumn, a beaten path to and from its gateway.

Nor need such a college suffer any loss in real democracy. Harvard and Princeton are regarded by some people as too aristocratic; but surely nobody ascribes this alleged defect



to the fact that they have rejected hundreds of deficient candidates that have been accepted promptly by other colleges. Their "loss" in numbers may well be connected causally rather with their recognized gains in efficiency than with their supposed loss in democratic spirit. President Tucker of Dartmouth said, a few years ago, "I do not understand how a college under the natural laws of growth can be reduced, except in violation of some one of the principles of democracy." If this be the only way to reduce a college, let us then violate that principle of democracy—if such it may be called—that refuses to discriminate between the fit and the unfit. Let us then violate that principle of democracy which in practice often seems to declare that every man is born free to enter college and equal to its opportunities.

Backbone in administration and educational insight we certainly need; courage based on conscious resources. But more enlightened leadership we are not likely to secure without further scientific organization and interpretation of contemporary experience. In Professor Wendell's entertaining book there are few con-

crete suggestions except, first, his scorn of the scientific training of teachers, and, second, his assertion that we must try new experiments, honestly and generously: two suggestions which those who have faith in the professional study of education regard as inconsistent. For we believe, rightly or wrongly, that one reason why we have seen so little light ahead and stumbled so much, is because we have had too much mere opinion in the dreary wastes of educational writings, often from persons who scoff at pedagogy, and too little scientific study. We believe, with Professor Hanus, that the chief reason why we seem always bound nowhere under full sail, is that we have failed to organize our educational experience. Hypotheses concerning college education must be submitted to the same rigorous and far-reaching statistical tests as hypotheses in physics or geology. Only thus can we hope to free our college administration from the fate that befalls every human undertaking concerning which everybody knows a little and nobody knows much.

*The Ideal College*

The trial is still in progress. The question is still before the court. Is there any type of college that can stand before the bar of popular judgment in America, face these serious charges, retain the essentials of its democracy, and yet receive from the most exacting jury a verdict of "not guilty"? We have faith to believe that there is such a type of college.

It is a college free to pursue its mission as the maker of men and enlightener of mankind, with unobscured vision of the truth, and power to proclaim the truth without fear or favor of politicians, or religious sects, or benefactors, or public cries, or its own administrative machinery.

It is, above all, the college that mistakes not bigness for greatness; that having fixed a minimum qualification for entrance, makes no catalog professions that are exaggerations of its actual demands, and no "special" openings for the unfit. It is a college open only to minds capable of good scholarship and ready, if not eager, to make the sacrifices it involves. It is a college that shuts its doors promptly on

idlers by means of a discipline from which there is no escape ; a college, in short, that refuses to grow in numbers and tuition fees at the expense of intellectual and moral vigor.

It is the college, therefore, that never permits growth beyond the possibility of daily, vital contact between each student and inspiring teachers — scholars who are first men, who know how to teach, and who are devoted to their work in the professional spirit. Accordingly, it is the college that resists the temptation to shift any considerable part of its teaching to temporary, inexperienced and underpaid instructors, whose chief interests do not centre in their students. It is the college that sees the folly of putting large sums into fine buildings and small sums into strong men; that pays its professors enough to leave them free to put their life-blood into the daily work; that thus protects its most vigorous teachers from the regular raids of universities. It is, at the same time, a college that will not suffer its sympathy for inefficient teachers to prevent their speedy retirement, whether they are young or old. It is the college that resists both the temptation to dissi-

pate its energies by rambling ventures into university domains, and the university temptation to substitute mechanism for personality in administration.

Thus it becomes a college that gives comparatively few courses, but gives them thoroughly; that tolerates not a single course whose demands can be satisfied by superficial work, or by two or three short periods of overstrain; that will never sacrifice its chief ends by allowing groups of students to neglect their studies to advertise the college. Rather than this, it is a college that insists, at any cost, on daily application, genuine intellectual effort, exactness, thoroughness, and the other requisites of moral manhood that alone can satisfy the growing demands of American citizenship. It is a college that rigidly holds to the chief safeguard of the Elective System, — that what a student chooses to do, he must do in a creditable way; a college that knows history too well to attempt to prescribe in detail the essentials of a liberal education, but does insist that every student shall do a considerable amount of good work in the department of his choice. It is a college that distributes its

credits on a scientific rather than a personal basis, and then puts a further premium on sound scholarship by making quality as well as quantity of work count toward graduation in a definite way. In short, it is a college that combats laziness, superficiality, dissipation, excessive indulgence in what we are pleased to call college life, by making the moral and intellectual requirements, before and after entrance, an honest, sustained, and adequate challenge to the best powers of the best American youth.

Finally, it is a college imbued with that kind of democratic spirit that coöperates for the common good with all the agencies of social progress; a college with a view of its responsibility that is not shut off by campus walls; a college that is changing because it is living; a college that loses none of its idealism through daily, practical contact with the many-sided life of city and state, here and now; that looks forward oftener than backward, and yet seeks the wisdom of organized experience to light the path ahead, thus supplanting the blind guidance of tradition by the safer guidance of scientific insight.

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## APPENDIXES



# APPENDIXES

## APPENDIX I

### AMHERST CURRICULUM

#### CLASSICAL COURSE

#### SCIENTIFIC COURSE

(1827 CATALOGUE)

#### FRESHMAN STUDIES

##### FIRST TERM

Day's Algebra	Same
Porter's Analysis of Rhetorical Delivery	Same
Livy, commenced	Levizac's French Grammar and Exercises
Graeca Majora, Historians	
Adams' Roman Antiquities	Le Traducteur François
	Philosophy of Arithmetic

##### SECOND TERM

Algebra, continued	
Porter's Analysis, continued	
Livy, concluded	Voltaire's Charles XII
Graeca Majora, Historians	Josse's Spanish Grammar and Exercises
	Bookkeeping by Double Entry

## THIRD TERM

Playfair's Euclid

The Philosophy of Eng-  
lish Grammar

Horace, Odes and Satires    Henriade

Graeca Majora, Poets        Colmena Espanola

## SOPHOMORE STUDIES

## FIRST TERM

Playfair's Euclid            Same

Newman's Rhetoric        Same

Horace                        French

Graeca Majora, Orators    Spanish

## SECOND TERM

Day's Math. (Log. &amp; Trig.)    Same

Woodbridge's Geography

(Commercial)                Same

Hedge's Logic                Same

Cicero                        French

Graeca Majora, Poets        Spanish

Naval and Military Tactics

## THIRD TERM

Day's Mathematics, Navi-  
gation and Surveying        SameDutton's Mathematics,  
Conic Sections and  
Spherical Geometry        Same

Woodbridge's Geography    Same

Graeca Majora, Poets        French

Cicero	Spanish
	Practical Mathematics
	Drawing

## JUNIOR STUDIES

## FIRST TERM

Dutton's Mathematics,	
Spherical Trigonometry	Same
Tytler's History	Same
The Philosophy of Natural	
History with its applica-	
tion to Natural Theology	Same
Chemistry	Same
Cicero	The Philosophy of History
Graeca Majora, Critics	Heeren's Politics of An-
	cient Greece

## SECOND TERM

Enfield's Philosophy, Me-	
chanics, Hydrostatics,	
Pneumatics, Magnetism	
and Electricity	Same
Chemistry, Cleaveland's	
Mineralogy	Same
Paley's Evidences of Chris-	
tianity	Same
Graeca Majora	Architecture
	Civil Engineering
	Schlegel's History of Lit-
	erature

## THIRD TERM

Enfield's Philosophy. Op- tics and Astronomy	Same
Geology	Same
Nuttall's Introduction to Biology and Torrey's Compendium	Same
Graeca Majora, Poets	Application of the Sciences to the Fine Arts
Tacitus	Ferguson on Civil Society

## SENIOR STUDIES

## FIRST TERM

Intellectual Philosophy  
Anatomy, with its applica-  
tions to Natural Theo-  
logy

## SECOND TERM

Philosophy of Rhetoric	Same
Say's Political Economy	Same
Hebrew or Greek	Modern Language or Mathematics

## THIRD TERM

Butler's Analogy  
Moral Philosophy

Weekly rhetorical exercises throughout the four years. Lectures specified as delivered to the students of one course will be attended by those of the other. The Latin Language may be substituted for the Spanish.

## AMHERST COLLEGE, 1830

## PREPARATORY STUDIES

Cicero's Select Orations, Clark's Introduction to the Making of Latin, Virgil, Sallust or Cæsar's Commentaries, Jacob's Greek Reader and the Four Gospels in Greek, or Graeca Minora and the Greek Testament, Geography, English Grammar, and Arithmetic.

## FRESHMAN STUDIES

## FIRST TERM

Livy, two books	Day's Algebra, commenced
Adams' Roman Antiquities	Porter's Analysis, con-
Graeca Majora, Historians	menced

## SECOND TERM

Livy. Five books, finished	Algebra, continued
Graeca Majora, Historians	Porter's Analysis, con-
	tinued

## THIRD TERM

Horace. Odes and Satires	Playfair's Euclid, com-
Graeca Majora, Poets	menced
(Heroic)	The Philosophy of English
	Grammar

*During the year.* A weekly Rhetorical Exercise, Declamation or English Composition. Also, Written Translations from the Ancient Languages.

## SOPHOMORE STUDIES

## FIRST TERM

Horace. Epistles and Art	
of Poetry	Euclid, concluded
Graeca Majora, Orators	Newman's Rhetoric

## SECOND TERM

Cicero de Officiis, de Senec- tute and de Amicitia.	Day's Mathematics. Loga- rithms, Plane Trigon- ometry, Mensuration of Superficies and solids, Isoperimetry, Mensura- tion of Heights and Dis- tances
Graeca Majora, Poets (Bucolic)	

## THIRD TERM

Cicero de Oratore	Dutton's Mathematics.
Graeca Majora, Poets (Tragic)	Conic Sections, and Spherical Geometry
French	Geography, and Logic, by Lectures and Examin- ations
Day's Mathematics. Navi- gation and Surveying	

*During the year.* Two weekly Rhetorical Exercises,  
Declamation, Debates, or English Composition.

## JUNIOR STUDIES

## FIRST TERM

Cicero de Oratore, finished	The Philosophy of Natural
Graeca Majora, Critics	History, with its appli- cation to Nat. Theology.
Dutton's Mathematics.	Smellie's Phil. Nat.
Spherical Trigonometry	History. Paley's Natural
Chemistry	Theology
History, by Subjects and Lectures	French



## SECOND TERM

Graeca Majora, Poets (Lyr.) and Phil.	Chemistry, concluded
Enfield's Philosophy. Me- chanics, Hydrostatics, French Pneumatics, Magnetism, and Electricity	Mineralogy

## THIRD TERM

Tacitus; History, De Mor. Ger. and Vita Agricolae	Enfield's Philosophy. Op- tics and Astronomy
Evidences of Christianity	Geology Botany

## SENIOR STUDIES

## FIRST TERM

Intellectual Philosophy, by subjects. Text Book, Hedge's edition of Brown's Philosophy of the Mind, with references to Locke, Reid, Stewart, and Payne	Say's Political Economy Anatomy
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## SECOND TERM

Philosophy of Rhetoric Butler's Analogy	Hebrew or Fluxions, at the option of the student
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## THIRD TERM

Moral Philosophy, by subjects. Text Book, Paley's  
Moral Philosophy, with references to Smith, Brown, and  
Payne.

On every Wednesday afternoon is an exercise in  
Declamation, in which all the Classes take part. Seniors  
deliver original essays.

## APPENDIX II

### HARVARD CURRICULUM, 1841

#### FRESHMAN YEAR

*Prescribed.*— Mathematics, Greek, Latin, and history.

*Elective.*— None.

#### SOPHOMORE YEAR

*Prescribed.*— English grammar and composition, rhetoric and declamation, one modern language, and history.

*Elective.*— Mathematics, Greek, Latin, natural history, civil history, chemistry, geology, geography, the use of the globes, and any modern language; so far as the means of such instruction are within the resources of the University.

#### JUNIOR YEAR

*Prescribed.* — English composition, one modern language, logic, declamation, physics, psychology, ethics, forensics, and history.

*Elective.*— The same as those of the Sophomore year, and a more extended course in psychology and ethics.

#### SENIOR YEAR

*Prescribed.*— Rhetoric, English composition, political economy, constitutional law, forensics, theology, history, and declamation.

*Elective.*— Political ethics, a more extended course in physics, and any of the elective studies above enumerated.<sup>1</sup>

<sup>1</sup> Annual Reports of the President and Treasurer of Harvard College, 1883-84, p. 13.

## APPENDIX III

### CURRICULUM OF HARVARD COLLEGE, WHEN CHARLES W. ELIOT BECAME PRESIDENT

#### FRESHMAN YEAR

*First Term.*—Mathematics, Latin and Greek, each four hours a week. French and ethics, each two hours a week. Elocution once a week.

*Second Term.*—Mathematics, Latin and Greek, each four hours a week. Greek history in French, two hours a week. Elocution once a week.

#### SOPHOMORE YEAR

*Required Studies.*—Chemistry and German, two hours a week the whole year. Roman history, psychology, and rhetoric, each two hours a week, half the year.

*Elective Studies.*—Latin, Greek, English, mathematics, and applied mathematics.

#### JUNIOR YEAR

*Required Studies.*—Physics, three hours a week the whole year. Logic and metaphysics, each two hours a week, half the year.

*Elective Studies.*—Latin, Greek, ancient history, mathematics, chemistry, natural history, German, English; each three hours a week, and each student must take two and may take three.

*Italian and Spanish*, as extras, and as a condition of

being allowed to continue the study of them in the Senior year with a mark of 8.

## SENIOR YEAR

*Required Studies.*— First Term. Political economy two hours a week, and history three hours a week. Second Term. Philosophy two hours, history two hours, and ethics one hour a week.

*Elective Studies.*— Latin, Greek, mathematics, physics, English, philosophy, history, and modern languages (only for advanced students), each three hours a week, and each student must take two, and may take three or give the time of three to two.

## APPENDIX IV

### EVOLUTION OF THE ELECTIVE SYSTEM AT HARVARD COLLEGE, 1872-1900

A few of the most significant steps are here noted, mainly in the words of the reports of the President.

1872-73. "Already, in the Senior year, only certain written exercises belong to the required course; and the Faculty, last year, decided to transfer to the Sophomore year the elementary study of political economy, and of the Constitution of the United States, which have heretofore been Junior studies, together with that portion of the required course in physics which was a Junior study. This change will leave as required studies of the Junior year only logic, psychology, and a portion of the course in rhetoric, as well as that in themes and forensics."

1873-74. "The only change decided upon during the past year in the prescribed course of study was an addition of one exercise a week to the two exercises already assigned to German in the Freshman year. . . . One less hour a week for a half-year, will be given to ethics."

1874-75. "The only change decided upon during the past year in the prescribed course of study was the transfer to the Freshman year of the physics proper, previously taught in the Sophomore year. In order to make room in the Freshman Course for two exercises a week in physics, one exercise a week each for a half-year was given up in ethics, classics, mathematics, and

chemistry. Ethics thereby ceases to be a prescribed College study. The prescribed chemistry will consist of a course of about twenty lectures, with an examination upon them."

1875-76. "Heretofore, rhetoric has been taught for two hours a week in the first half of the Sophomore year, and two hours a week for half of the Junior year. (The Junior rhetoric is transferred to Sophomore year.) This change will free the Junior year of all prescribed studies except philosophy, which is required for two hours a week through the year."

(The required Sophomore study of political economy has been dropped from the course, and the time given to the comparative study of the American and English Constitutions. Only four hours of required study are left in Sophomore year.)

1876-77. A table here shows the number of students electing each subject. The most striking feature of this table is the decline in the proportion of time given to the classics. Mathematics and physics also show a steady decline. English, Italian and Spanish, natural history, French, and philosophy show gains.

1877-78. Thirty-eight courses of instruction were set apart for graduate students. "The courses which have thus disappeared from the list of ordinary elective studies are the second courses in Sanskrit, the courses in ecclesiastical Greek, Homeric philology, and Latin inscriptions, orthography and pronunciation, those in Roman law, and international law, one of the courses in mathematical physics, three in entomology, palæontology, and economic geology, and one course in music."

1878-79. "An important change in the course of study was effected in the past year, by the removal of logic and metaphysics from the prescribed work of the Junior year, and of history from that of Sophomore year."

This leaves the Junior year free from all prescribed work except themes, and the Sophomore year free from all prescribed work except rhetoric and themes.

1881-82. The distinction is lost between graduate and undergraduate courses. It had already disappeared among elective courses by which they were formerly listed as Senior, Junior and Sophomore studies.

1883-84. The most important change made in the college this year was the extension of the Elective System to Freshman year by dropping Latin, Greek, and mathematics from the prescribed courses. Of the seven hours a week of prescribed work appointed for the present Freshman class, three were given to rhetoric and English composition; three to German or French (the one not presented for admission); and one to lectures on chemistry and physics, each one hour a week for a half year. In addition to these prescribed studies, every Freshman is required to take three full courses,—not more than two in any one department.

The result of this radical extension of freedom to the lowest class was as follows:—

Number of Freshmen, 255; number who elected one or more courses in: Latin, 196; Greek, 163; mathematics, 141; history, 131; French, 98; natural history, 50; German, 26; physics, 25; chemistry, 11; 83 took Greek, Latin and mathematics.

1889-90. The list of prescribed studies was modified



by the omission of English D (a Senior course in forensics) and physics A (a course of about twelve weekly lectures for Freshmen). A similar fragment of required chemistry was also dropped.

1894-95. For persons who pass examinations at admission in both elementary French and elementary German, English (a three-hour course in Freshman year) is the only prescribed course in Harvard College.

1910. Adoption under President Lowell of a restriction of the Elective System, controlling the concentration and distribution of studies.

## APPENDIX V

### BOWDOIN COLLEGE CURRICULUM, 1871<sup>1</sup>

#### *Freshman Year*

FIRST TERM	SECOND TERM	THIRD TERM
60 recitations in Latin. Oral exercises and select translations (Young's Delectus).	60 recitations in Latin. Dictation exercises and Lat. Composition.	60 recitations in Latin, Cicero De Oratore ; Latin Composition.
48 lectures on Physics, Geography, and Meteorology.	48 lectures on Mechanics, Hydrostatics, and Pneumatics.	12 recitations in Ancient History.
12 recitations in English. Etymology (Latham or Kerl).	12 recitations in English. Syntax.	36 lectures on Acoustics, Heat, and Optics.
60 recitations in Mathematics. Greenleaf's Alg.	60 recitations in Mathematics. Geometry. Davies' Legendre.	12 recitations in English punctuation, etc.
Elements of Drawing.	Drawing.	40 recitations in Mathematics, Trigonometry, and Mensuration.
Exercises in Elocution.	Exercises in Elocution.	20 recitations in Rhetoric (Newman).
Eng. Composition.	Eng. Composition.	Drawing, Elocution, and Composition.

<sup>1</sup> *Catalogue of Bowdoin College, 1871, pp. 26-27.*

*Sophomore Year*

FIRST TERM	SECOND TERM	THIRD TERM.
48 recitations in Math. Surveying, Navigation, and Spherical Trig., field work, plots, plans, etc.	60 recitations and lectures. Anal. Geom. of 2 and 3 dimensions.	60 recitations in Math. Diff. and Int. Calculus, or 30 rec. in Law and 30 in Logic.
12 lectures on Gen. Chem.	40 rec. in French. Otto's Grammar. Bôcher's Reader.	12 lectures on Physiology and Hyg.
60 rec. in French. Otto's Grammar.	20 rec. in Rhetoric, Whately's.	48 rec. in Botany (Elementary).
60 rec. in Mechanics, Nature, and Transmission of Force. Exercises in Elocution. Themes.	30 recitations, Seeley's Eng. Lessons. Six weeks in Laboratory. Elocution and Themes.	60 rec. in French (Racine, Athalie). Elocution and Themes.
Optional: Nautical Astronomy, Hist. of Middle Ages, Latin, Drawing.	Optional: Chem., Physics, Conic Sections, Latin, Hist. of France, Drawing (Shades and Shadows), Isometrical Projections.	Optional: Field work in Leveling, Triangulation, and Topography; U. S. Coast Survey Methods; Topographical Drawing; Linear Perspective; Hist. of England, Latin, Drawing, Music.

The remainder of the Course will be arranged from the studies given below. Some options are offered which will be grouped in accordance with certain leading objects: Natural Science, Engineering, or more general study.

*Junior Year*

Physics,—Prime Motors, Steam Engine, Water Wheel, Windmill, etc. Mechanics, Hydrostatics, Pneumatics, Acoustics, Optics, Machinery. Laboratory work. Botany, Mineralogy, Zoölogy, Comparative Anatomy, and Physiology. Chemistry,—Qualitative and Quantitative Analysis, Agricultural Chemistry. Laboratory work. Topographical Engineering, Descriptive Geometry, Roads and Bridges, Orthographic and Stereographic Projection, Mechanical Drawing. History,—Elizabethan Age, America. English Literature, Rhetoric, Parliamentary Rules and Practice, Elocution, Elements of Music. German,—Otto's Grammar, Schiller, Goethe. Latin,—Composition, Cicero, Horace. French,—Borel's Grammaire Française, Scheler's Dict. d'Etymol. Française, Racine, Molière, Corneille. Swedish,—12 Lectures on Scandinavian Languages and Literature, May's Swedish Grammar, Runeberg, Fenrik Stal's Sanger, Frithiof's Saga. Italian.

*Senior Year*

Astronomy, Geology, Psychology, Metaphysics, Ethics, Evidences of Christianity, Political Science, Constitution of the United States, Common Law, Argumentative Composition, with study of masterpieces. Hydrographical Engineering, Specialties in Mechanical Engineering, Strength of Materials, Theory of Arches, Architectural and Structural Drawing. English,—Study of Masters. German,—Whitney's Grammar, Exercises in Writing, Deutsche Literaturgeschichte, Becker's Grammar, Niebelungen Lied. Spanish,—Novelas Españolas.

SCIENTIFIC DEPARTMENT — NATURAL SCIENCE<sup>1</sup>*Last Two Years**Junior Year*

FIRST TERM	SECOND TERM	THIRD TERM
German, Otto's Grammar. Eng. Literature.	German, Taugenichts or Undine. Polit. Econ.	German, Goethe's Faust. Anatomy and Physiology. Zoölogy.
Chemical Physics. Blow-pipe Analysis.	Physics. 12 lectures on Greek and its uses in English.	Physiological Botany.
Mineralogy.	Qual. Analysis.	Agricultural Zoölogy.
Elocution and Composition.	Oratory and Composition.	Insects useful and injurious. Oratory and Composition.
French or Latin.	French or Latin.	French or Latin.

*Senior Year*

Astronomy.	Natural Theology.	Ethics and Esthetics.
Mental Phil.	Chem. Phil.	Geology.
Quant. Analysis	Organic Chemistry.	Comp. Anatomy and Physiology.
Agricultural Chem.	Vegetable Physiology.	International Law.
Metallurgy.	Diseases of Plants.	Excursions for study; field, river, and sea.
Polit. Phil.	Constitution of U.S.	
Excursions for study, on land and water.	Languages, Swedish or Anglo-Saxon.	
	Spanish.	

German.

<sup>1</sup> *Bowdoin College Catalogue*, 1871-72, p. 33.

SCIENTIFIC DEPARTMENT — ENGINEERING <sup>1</sup>*Junior Year*

FIRST TERM	SECOND TERM	THIRD TERM
German.	German	German.
Eng. Literature.	Political Economy.	Natural History.
Mineralogy.	Anal. Mechanics.	Applied Mechanics.
Calculus, cont.	Nature and Strength	Roads, Railroads,
Desc. Geometry.	of Materials.	Canals.
Field Work, Transit, Level.	Carpentry and	Curves and Profiles.
Barometrical Leveling.	Building.	Topography, Charts,
Drawing, Architectural, Mechanical, Topographical.	Wooden and Iron	and Projections.
Oratory and Composition.	Bridges.	Survey and Location,
	Earthwork and	Laying out
	Foundations.	work, Estimates.
	Shades, Shadows,	Oratory and Composition.
	and Perspective.	
	Oratory and Composition.	

*Senior Year*

Astronomy.	Chemistry, Physics.	Metaphysics, Ethics,
Polit. Philosophy.	Practical Hydraulics.	and Esthetics.
Steam Engine and other Prime Motors.	Water Supply of Cities.	Hydrography,
Architecture.	Drainage and Sewage.	Dams, Docks,
Reclaiming and Improvement of Rivers.	Specifications and Contracts.	Harbors, Sea
Military Engineering.	Constitution of U. S.	Walls, Light-
Drawing.	Drawing, Mechanical, Topographical, and Architectural.	houses.
Oratory and Composition.	Oratory and Composition.	U. S. Coast Survey
		Methods.
		Contemporary History.
		Modern Geography.
		International Law.
		Oratory and Composition.

<sup>1</sup> *Catalogue of Bowdoin College, 1871-72, p. 34.*

SCIENTIFIC DEPARTMENT — SELECT STUDIES<sup>1</sup>*Junior Year*

FIRST TERM	SECOND TERM	THIRD TERM
German.	German.	German.
English Literature.	Political Economy.	Natural History.
Mineralogy.	Physics.	Botany, Zoölogy.
Chemistry, Physics.	History of France.	Anatomy and Physiology.
History of Middle Ages.	Military Science and Tactics.	History of England.
Rural Economy.	Oratory and Composition.	Military Science and Tactics.
Drawing, Elocution, and Composition.	Drawing.	Oratory and Composition.
Military Science and Tactics.		Excursions for study by field, river, and sea.
<hr/>		
Languages, Ancient or Modern.	Borel's Grammaire Française. Scheler's Dict. d'Etymologie.	Racine, Molière, Corneille.

*Senior Year*

Mental Philosophy.	Natural Theology.	Ethics and Esthetics.
Astronomy.	Chemical Philosophy.	International Law.
Polit. Philosophy.	Organic Chemistry.	Study of Masters in Eng. Literature.
Architecture.	History of America.	History and Geog. of present time.
History of the Elizabethan Age.	Constitution of U.S.	Geology.
Study of Masterpieces in English Composition.	Masterpieces of Argumentative Composition	Comp., Anatomy, and Physiology.
<hr/>		
Languages, Ancient or Modern.	Swedish: May's Grammar. Runeberg, Fenrik. Ståhl's Sönger.	Swedish: Frithiof's Saga. Italian.

<sup>1</sup> *Catalogue of Bowdoin College, 1871-72, p. 35.*

## APPENDIX VI

### BOWDOIN COLLEGE, 1876. COURSE OF STUDY IN WHICH ELECTIVES FIRST APPEAR.<sup>1</sup>

#### FRESHMAN YEAR

*First Term.*—Livy and Latin Composition. Selections from Greek authors and Greek Composition. Ancient History (Rawlinson). Algebra.

*Second Term.*—Livy and Latin Composition. Herodotus, Lysias, and Greek Composition. Ancient History. Geometry.

*Third Term.*—Odes of Horace. Odyssey and Greek Composition. Ancient History. Plane Trigonometry, Mensuration, Surveying, and Navigation.

#### SOPHOMORE YEAR

*First Term.*—Satires and Epistles of Horace. Demosthenes. French. Rhetoric. Spherical Trigonometry. Conic Sections.

*Second Term.*—Cicero, Tusculan Disputations, Book I. Sophocles. French. Analytical Geometry.

*Third Term.*—Terence. Plato. French. Logic. English Literature. Quaternions (optional).

#### JUNIOR YEAR

*First Term.*—Tacitus and Juvenal (elective). Calculus (elective). German. Physics, Lectures and Recitations. Optional Greek.

<sup>1</sup> *Catalogue of Bowdoin College, 1876-77, p. 23.*



*Second Term.*—German. Lectures on Philology. Analytical Chemistry. Astronomy. Greek (optional). Quintilian (optional).

*Third Term.*—German, Faust or Hermann and Dorothea. Lectures on Philology. Mineralogy and Crystallography. Structural Botany. Optional Greek. Optional Latin.

## SENIOR YEAR

*First Term.*—Political Economy. Walker's Science of Wealth. Geology, Dana's. Evidences of Christianity, Paley. Constitutional Law, Andrews.

*Second Term.*—Mental Philosophy, Hopkins' Study of Man. Evidences of Christianity, Butler's Analogy. Chemistry, Lectures and Laboratory work. International Law, Woolsey's.

*Third Term.*—Moral Philosophy, Gregory's Ethics. Chemistry, Lectures and Recitations. Political Ethics, Mulford's Nation.

Exercises in Composition and Oratory throughout the course.

## APPENDIX VII

### BOWDOIN COLLEGE, 1880. THE CLASSICAL COURSE INVADED BY THE SCIENCE COURSE

#### *Freshman Year*

FIRST TERM	SECOND TERM	THIRD TERM
Latin.	Latin.	Latin.
Greek.	Greek.	Greek.
Algebra.	Algebra (3).	Ancient History.
Plane Geometry.	Solid Geometry (3).	Pl. Trigonometry.
	Con. Sections (2).	

WEDNESDAY P. M.

Lecture on Hygiene, Rhetoricals.

#### *Sophomore Year*

FIRST TERM	SECOND TERM	THIRD TERM
Rhetoric (1).	Rhetoric (3).	English Literature.
French (3).	History (1).	History (1).
Spher. Trigonom.	French.	French (3).
Latin.	Latin.	Latin.
Greek.	Greek.	Greek.

(Analytical Geometry may be taken in place of Greek or Latin.)

WEDNESDAY P. M.

Rhetoricals.

#### *Junior Year*

Required (3 Studies)

FIRST TERM	SECOND TERM.	THIRD TERM
German.	German.	German (2).
Astronomy.	Physiology.	History (2).
Physics.	Physice.	Psychology.
		Anal. Chemistry.

## Elective (1 Study)

Latin.	Science of Language.
Greek.	Physics.
Dif. and Int. Calculus.	Botany.
Zoölogy.	

WEDNESDAY P. M.

Rhetoricals.

*Senior Year*

## Required (3 Studies)

FIRST TERM	SECOND TERM	THIRD TERM
Political Economy.	Public Law.	Political Science.
Logic.	Ethics.	Evid. of Christianity.
Geology.	History of Philosophy.	Public Law (2).
Gen. Chemistry.		Geology (2).

## Elective (1 Study)

Mineralogy.  
 Analytical Chemistry.  
 German.  
 English Literature.

WEDNESDAY P. M.

Rhetoricals.

Instruction in Spanish, Italian, and Anglo-Saxon will be given to those who desire it, as extras.

## APPENDIX VIII

### FRANCIS WAYLAND ON COLLEGE REFORMS, 1842.<sup>1</sup>

Our Colleges, as I have already remarked, are at present scarcely anything more than schools for the education of young men for the professions. So long as we continue the present organization they can be no other. While we construct our system for this purpose and adhere to a regular graduation of classes and prescribed studies for each, we may make what changes we please, but the regular course will control every other. But while we have made our College course a mere preparation for professional education, we have so crowded it with studies as to render it superficial and probably less valuable for its particular purpose than it was originally. I am not sure that we are not already suffering from the effect of the course which we have pursued. I rather fear that the impression is gaining ground that this preparation is not essential to success in professional study. A large proportion of our medical students are not graduates. The proportion of law students of the same class is, I rather think, increasing. The proportion of students for the ministry who resort to College is much larger than formerly. This is owing, in no small degree, to the aid of education societies. What would be the case if this aid were out of the question, I am unable to determine. If these things be so, it would

<sup>1</sup> Wayland, Francis, *On the Present College System*, pp. 153-156.

seem that while we have been restricting our Collegiate education to one class, its value by that class is less and less appreciated.

But while this is the case, in consequence of this unintentional restriction, a very large class of our people have been deprived of all participation in the benefits of higher education. It has been almost impossible in this country, for the merchant, the mechanic, the manufacturer, to educate his son beyond the course of a common academy unless he gave him the education preparatory for a profession. This was not the education which he wanted, and, of course, his son has been deprived of the cultivation which the parent was able and willing to bestow. Now the class of society that is thus left unprovided for, constitutes the bone and sinew, the very choicest portion of this or of any community. They are the great agents of production, they are the safest depositories of political power. It is their will, that, in the end, sways the destinies of the nation. It is of the very highest importance, on every account, that this portion of a people should possess every facility for the acquisition of knowledge and intellectual discipline. Nothing would tend so much to the progress of wealth among us as the diffusion throughout the whole people of a knowledge of the principles of science, and the application of science to the arts. And besides, a knowledge of moral and intellectual philosophy, of the fundamental principles of law, of our own constitution, of history, of vegetable and animal physiology, and of many other sciences, is just as necessary and just as appropriate to the merchant, the manufacturer, the mechanic, and the farmer, as to the lawyer, the clergyman, or the physician. Why should it

be supposed that all higher knowledge should be engrossed exclusively by the professions? If a man wishes to give his son a good education, why should he be obliged to make him a lawyer, a physician, or a clergyman? Why should not the highest intellectual endowment, cultivated by the best preparatory discipline, be found in every mode of occupation? And if this be so, why has this whole subject been so long neglected among us? Is it not time that our system should in this matter undergo a complete and radical revision?

What I would propose on this subject, then, is briefly as follows: In the first place, let the course preparatory to a profession be distinctly marked out, and let it be generous and thorough. Let it embrace such branches of study as are particularly necessary for fitting men for the professions, and let it be carried on to such an extent as shall communicate enlarged and generous knowledge, and vigorous mental discipline. But while this is done, let our system be so enlarged in its provisions that the means of education in other branches may be open to all who choose to avail themselves of them. Let there be established courses of lectures on all the subjects which I have specified, and as many more as may be necessary, to which men of all classes may resort. Let there be no compulsory residence; let every man come by ticket; and let him be admitted to every privilege which the nature of the case demands. In a word, let the College be the grand centre of intelligence to all classes and conditions of men, diffusing among all the light of every kind of knowledge, and approving itself to the best feelings of every class of the community. Let it, besides being a preparatory school to the profes-

sions, be a Lowell Institute to the region in which it is placed. I know of nothing that would tend so strongly to promote the growth of wealth and civilization and refinement among us. Nothing would so surely annihilate that division of the community into classes, which, already, in spite of our democratic institutions, threatens the direst evils to our republic.

## APPENDIX IX

### YALE CURRICULUM, 1823.

FRESHMAN CLASS		SOPHOMORE CLASS	
1	<ul style="list-style-type: none"> <li>{ Livy.</li> <li>{ Adams' Roman Antiquities.</li> <li>{ Webber's Arithmetic.</li> <li>{ Murray's English Grammar.</li> </ul>		<ul style="list-style-type: none"> <li>Graeca Majora.</li> <li>Playfair's Euclid.</li> <li>Horace.</li> </ul>
2	<ul style="list-style-type: none"> <li>{ Livy.</li> <li>{ Elegantiae Latinae.</li> <li>{ Graeca Majora.</li> <li>{ Day's Algebra.</li> </ul>		<ul style="list-style-type: none"> <li>Euclid.</li> <li>Horace.</li> <li>Day's Mathematics.</li> <li>Graeca Majora.</li> <li>Cicero.</li> </ul>
3	<ul style="list-style-type: none"> <li>{ Graeca Majora.</li> <li>{ Morse's Geography.</li> <li>{ Murray's Gram. (reviewed).</li> </ul>		<ul style="list-style-type: none"> <li>Day's Mathematics.</li> <li>Conic Sections and Spheric Geometry.</li> <li>Jamieson's Rhetoric.</li> <li>Cicero.</li> </ul>
JUNIOR CLASS		SENIOR CLASS	
1	<ul style="list-style-type: none"> <li>{ Spheric Trigonometry.</li> <li>{ Graeca Majora.</li> <li>{ Enfield's Philosophy.</li> <li>{ Cicero.</li> </ul>		<ul style="list-style-type: none"> <li>Blair's Rhetoric.</li> <li>Hedge's Logic.</li> <li>Locke's Essays.</li> </ul>
2	<ul style="list-style-type: none"> <li>{ Homer's Iliad.</li> <li>{ Enfield's Philosophy.</li> <li>{ Cicero.</li> <li>{ Tacitus.</li> </ul>		<ul style="list-style-type: none"> <li>Paley's Natural Theology.</li> <li>Stewart's Philosophy of the Mind.</li> </ul>
3	<ul style="list-style-type: none"> <li>{ Enfield's Astronomy.</li> <li>{ Tytler's History.</li> <li>{ Fluxions, Greek or Hebrew.</li> </ul>		<ul style="list-style-type: none"> <li>Paley's Moral Philosophy.</li> <li>Paley's Evidences of Christianity.</li> </ul>

### *Entrance Requirements*

Cicero's Select Orations.  
 Clark's Introduction to the Making of Latin.  
 Virgil.  
 Sallust.



Greek Testament.

Dalzel's *Graeca Minora*.

Adams' Latin Grammar.

Goodrich's Greek Grammar.

Latin Prosody.

Arithmetic.



Name	Preparatory School
Date of Birth	Address of School
Birthplace	Date of Admission to College
Father's Name (*indicates death)	Method of Admission
Mother's Name	CREDITS FOR ADMISSION
Guardian's Name	Total
Guardian's Address	Algebra, Elementary
Entrance Failures	Algebra, Advanced
Failures Made Up	Chemistry
Conditions of Admission	English 1
	English 2
	French, Elementary
	French, Advanced
	German, Elementary
	German, Advanced
	Greek, Elementary
	Greek, Advanced
	Geometry, Plane
	Geometry, Solid
	History, American
	History, English
	History, Greek
	History, Roman
	Latin, Elementary
	Latin, Advanced (A)
	Latin, Advanced (B)
	Physice
	Trigonometry, Plane
	EXCEPTIONS OR EQUIVALENTS



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